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POLLUTION OF THE INTERSTATE WATERS OF THE HUDSON RIVER AND ITS TRIBUTARIES. NEW YORK AND NEW JERSEY. PROCEEDINGS OF CONFERENCE, SESSION (3RD) HELD AT NEW YORK, NEW YORK ON JUNE 18-19, 1969

Federal Water Pollution Control Administration
Washington, D.C.

19 June 1969

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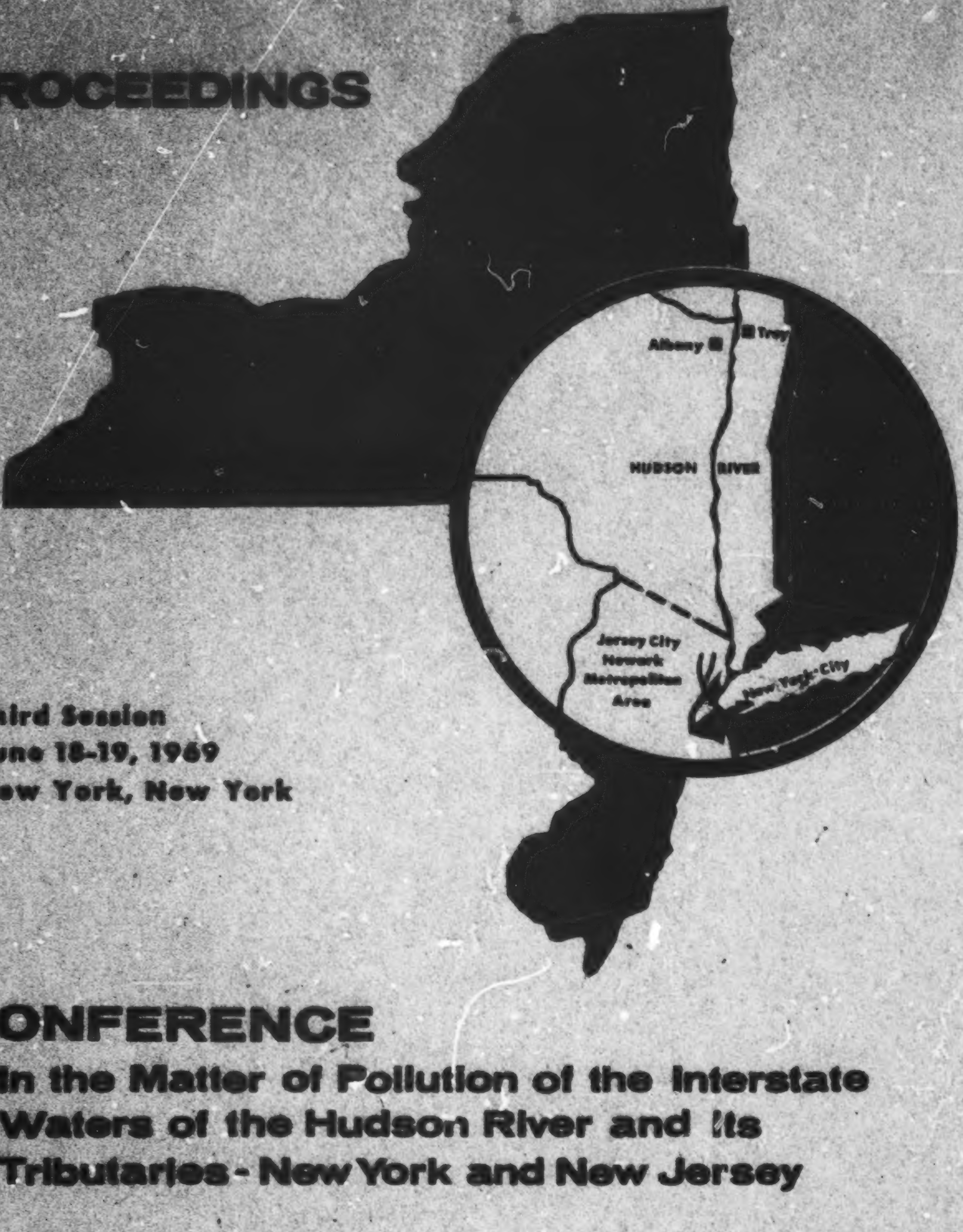
Albany
Troy
HUDSON RIVER
Jersey City
Newark
Metropolitan
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New York City

Third Session
June 18-19, 1969
New York, New York

CONFERENCE

In the Matter of Pollution of the Interstate Waters of the Hudson River and Its Tributaries - New York and New Jersey

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: THIRD SESSION :

: CONFERENCE :

: In the Matter of :

: Pollution of the Interstate :

: Waters of the Hudson River :

: and its Tributaries :

: Statler-Hilton Hotel :

: New York, New York :

: June 18 and 19, 1969 :

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Third Session of the Conference in the Matter of Pollution of the Interstate Waters of the Hudson River and its Tributaries, convened at 9:30 a.m., on Wednesday, June 18, 1969, at the Statler Hilton Hotel, New York, New York.

PRESIDING:

Hon. Carl L. Klein, Assistant Secretary of the Interior for Water Quality and Research, Federal Water Pollution Control Administration, Department of the Interior, Washington, D. C.

Mr. Murray Stein, Assistant Commissioner for Enforcement, Federal Water Pollution Control Administration, Department of the Interior, Washington, D. C.

CONFEREES:

Mr. Lester M. Klashman, Regional Director, Northeast Region, Federal Water Pollution Control Administration, Department of the Interior, Boston, Massachusetts.

Mr. Dwight F. Metzler, Deputy Commissioner, New York State Health Department, Albany, New York.

CONFEREES: (Continued)

Mr. Richard J. Sullivan, Director, Division of Clean Air & Water, New Jersey State Department of Health, Trenton, New Jersey.

Mr. Thomas R. Glenn, Jr., Director and Chief Engineer, Interstate Sanitation Commission, 10 Columbus Circle, New York, New York.

PARTICIPANTS:

Dr. Hollis S. Ingraham, Commissioner, New York State Health Department, Albany, New York.

Mrs. Jean Faust, Assistant, Environmental Pollution, representing Congressman William F. Ryan, 1040 St. Nicholas Avenue, New York, New York.

Mr. Albert Bromberg, Chief of Operations, Hudson-Delaware Basins Office, Federal Water Pollution Control Administration, Department of the Interior, Edison, New Jersey.

Mr. Edward Conley, Federal Activity Coordinator, Northeast Region, Federal Water Pollution Control Administration, Department of the Interior, Boston, Massachusetts.

PARTICIPANTS: (Continued)

Colonel Riel S. Crandall, Engineer, United States Military Academy, West Point, New York.

Mr. Robert H. Wuestefeld, Assistant Chief of Operations, New York District, Corps of Engineers, 26 Federal Plaza, New York, New York.

Mr. Thomas A. Schrader, Assistant Regional Director, Bureau of Sport Fisheries & Wildlife, Post Office & Courthouse, Boston, Massachusetts.

Dr. Merril Eisenbud, Administrator, Environmental Protection Administration, City of New York, Room 2350, Municipal Building, New York, New York.

Mrs. Frank J. Rooney, Water Chairman, League of Women Voters, 400 Bloomfield Avenue, Montclair, New Jersey.

Dr. Natale Colosi, Chairman, Interstate Sanitation Commission, 10 Columbus Circle, New York, New York.

PARTICIPANTS: (Continued)

Mr. Gordon K. Cameron, Village Administrator, Croton-on-Hudson, Municipal Building, Croton-on-Hudson, New York.

Mr. Guy E. Griffin, Deputy Commissioner, Westchester County Department of Public Works, County Office Building, White Plains, New York.

Mr. Fred J. Wurtemberger, Administrative Executive, Rensselaer County Sewer District, County Court House, Troy, New York.

Mrs. Ann Maynard, representing Mrs. Charles Bean, Chairman Designate, New York State Citizens Tie-Line.

Mr. Paul W. Eastman, Assistant Commissioner, New York State Health Department, Albany, New York.

Mr. Maurice M. Feldman, Commissioner, New York City Department of Water Resources, Room 2454, Municipal Building, New York, New York.

Mr. Martin Lang, Director, Bureau of Water Pollution Control, New York City Department of Water Resources, 40 Worth Street, New York, New York.

PARTICIPANTS: (Continued)

Mr. Frederick S. Kent, Assistant Commissioner, Environmental Health Services, New York City Health Department, 125 Worth Street, New York, New York.

Mrs. Farrell Jones, New York State Water Chairman, League of Women Voters, 22 Driftwood Drive, Port Washington, New York.

Mr. Seymour A. Lubetkin, Chief Engineer, Passaic Valley Sewerage Commissioners, 790 Broad Street, Newark, New Jersey.

Mr. Gardner L. Grant, Vice-President, Theodore Gordon Fly-fishers, Inc.

Hon. William J. Ferrall, State Senator, 22nd District-New York, 423 Ninth Street, Brooklyn, New York.

Mr. Jesse W. Brodey, 20 Lenox Avenue, White Plains, New York.

OTHERS IN ATTENDANCE:

Mr. Charles F. Ahlers, Assistant Administrator, New York City Environmental Protection Administration, 2345 Municipal Building, New York, New York.

Mr. Arthur Ashendorff, Civil Engineer, New York City Department of Health, 93 Worth Street, New York, New York.

Mrs. Erik Barnouw, Water Committee, Tri-State League of Women Voters, 16 Center Avenue, Larchmont, New York.

Mr. Howard Blum, System Analyst, Computer Applications, 555 Madison Avenue, New York, New York.

Mr. Francis M. Bradley, Superintendent, Edgewater Sewage Treatment Plant, Edgewater, New Jersey.

Mr. Richard B. Carey, Calgon Corporation, 271 Madison Avenue, New York, New York.

Mr. John Carlson, Environment Controls, Lever Bros., 101 River Road, Edgewater, New Jersey.

Mr. George B. Case, Deputy Mayor, Village of Tarrytown, Tarrytown, New York.

OTHERS IN ATTENDANCE: (Continued)

Mr. Anthony J. Castronovo, Director, Utilities Division. U. S. Navy Headquarters, Commandant, Third Naval District, 90 Church Street, New York, New York.

Mr. Don S. Cook, Teachers College, Columbia University, 245 West 107th Street, New York, New York.

Mr. George T. Cowherd, Jr., Environmental Engineer, Con Edison, 4 Irving Place, New York, New York.

Mr. Robert S. Cutler, Operations Research Analyst, National Bureau of Standards/TAD, Department of Commerce, Washington, D. C.

Mr. Eugene M. Danilchick, Civil Engineer, Military Ocean Terminal, Bayonne, New Jersey.

Mr. George A. Danskin, Biologist, New York State Conservation Department, 21 South Pott Corners Road, New Paltz, New York.

Mr. G. Davis, President, Davis Company, 47 Rue de la Sinne, 68 Mulhouse, France.

OTHERS IN ATTENDANCE: (Continued)

Mr. Stanley R. Davis, Regional Hydraulic Engineer, U. S. Federal Highway Administration, Region 1, 4 Normanskill Boulevard, Elsmere, New York.

Mr. Robert V. Day, Senior Engineer, Western Electric, 222 Broadway, New York, New York.

Mr. John A. DeFilippi, Project Manager, Roy F. Weston, Inc., Lewis Lane, West Chester, Pennsylvania.

Mr. J. DeMartino, Director, Jersey City Sewerage Authority, Route 440 & Culver Avenue, Jersey City, New Jersey.

Mr. John DeZvane, Acting Director, Bureau of Sanitary Engineering, New York City Health Department, 93 Worth Street, New York, New York.

Mr. William M. Dunne, Sanitary Engineer, U. S. Military Academy, West Point, New York.

Mr. F. Fahy, Counsel, Jersey City Sewerage Authority, Route 440 & Culver Avenue, Jersey City, New Jersey.

OTHERS IN ATTENDANCE: (Continued)

Mr. Edward V. Fitzpatrick, Deputy Director, Hudson-Delaware Basins Office, Federal Water Pollution Control Administration, Department of the Interior, Edison, New Jersey.

Mr. Paul Fitzgerald, Program Associate, New York State Department of Health, 901 North Broadway, White Plains, New York.

Mr. Keith Fry, Assistant to the Vice-President, Air & Water Management, International Paper Company, 220 East 42nd Street, New York, New York.

Mr. Harry W. Gehm, Technical Director, National Council for Air and Stream Improvement, 103 Park Avenue, New York, New York.

Mr. I. Gellman, Assistant Technical Director, National Council for Air and Stream Improvement, 103 Park Avenue, New York, New York.

Mr. Richard Goldsmith, Summer Intern, Office of Senator Jacob K. Javits, 110 East 45th Street, New York, New York.

OTHERS IN ATTENDANCE: (Continued)

Mr. James A. Gouch, Air & Water Control, Allied Chemical Corp. P. O. Box 70, Morristown, New Jersey.

Mr. M. Grant Gross, Acting Director, State University of New York, Marine Sciences Research Center, Stony Brook, New York.

Mr. James J. Gushaw, Principal Engineer, Sverdrup & Parcel, 1250 Broadway, New York, New York.

Mr. Robert A. Hall, Highway Engineer, U. S. Bureau of Public Roads, 12-14 Russell Road, Albany, New York.

Mr. A. Handley, Director, Waste Management Services, New York State Pure Waters Authority, 41 State Street, Albany, New York.

Mr. G. M. Hansler, Regional Administrator, Department of Health, Education, and Welfare, CPEHS, 26 Federal Plaza, New York, New York.

Mr. John E. Harrison, Regional Engineer, New York State Health Department, 901 North Broadway, White Plains, New York.

OTHERS IN ATTENDANCE: (Continued)

Mr. Kenneth B. Hauptman, Chief, Plant Operations, Castle Point Hospital, Castle Point, New York.

Mr. Charles G. Herbermann, Glenwood Gardens, Yonkers, New York.

Mr. Christian T. Hoffman, Jr., Supervising Public Health Engineer, New Jersey State Department of Health, Trenton, New Jersey.

Mr. Richard Ince, Staff Worker for Senator Javits, 40 East 45th Street, New York, New York.

Miss Dorothy Ingling, Associate Public Information Specialist, Interstate Sanitation Commission, 10 Columbus Circle, New York, New York.

Mr. Lawrence J. Kaitz, Assistant Manager, Engineering, Western Electric Co., 222 Broadway, New York, New York.

Mr. William A. Keene, Senior Engineer, Westchester County Department of Public Works, County Office Building, White Plains, New York.

Mr. Kevin J. Kehoe, Sales Engineer, Monsanto Biodize, 112-20 14th Avenue, College Point, New York.

OTHERS IN ATTENDANCE: (Continued)

Mr. Edward J. Kendrick, Executive Director, Rockland County Sewer District #1, 18 New Hempstead Road, New City, New York.

Mr. Alan G. Kirk II, Associate Solicitor, Department of the Interior, Washington, D. C.

Miss Ellen Krieger, Senator Jacob Javits' Office, 110 East 45th Street, New York, New York.

Mr. Patrick J. Lawler, Project Engineer, Quirk, Lawler & Matusky, 505 Fifth Avenue, New York, New York.

Mr. John A. Lawrence, Assistant Engineer, Passaic Valley Sewerage Commissioners, 890 Broad Street, Newark, New Jersey.

Mr. J. B. Lebo, Environmental Engineer, Calgon Corp., 271 Madison Avenue, New York, New York.

Miss Maxine H. Lorang, Budget Analyst, Senate Finance Minority, Albany, New York.

Mr. Albert Machlin, Assistant Director, Environmental Health Services, New York State Health Department, 270 Madison Avenue, New York, New York.

OTHERS IN ATTENDANCE: (Continued)

Mr. William Manley, Assistant Chief Engineer, Veterans Administration Hospital, Castle Point, New York.

Mr. W. K. Mann, American Petroleum Institute, New York, New York.

Mr. Lawrence Mansue, Hydraulic Engineer, U. S. Geological Survey, Water Resources Division, P. O. Box 1238, Trenton, New Jersey.

Mr. Stanley Marx, Assistant Division Engineer, Con Edison, 4 Irving Place, New York, New York.

Mr. Charles A. Manganaro, Manganaro, Martin & Lincoln, 51 Madison Avenue, New York, New York.

Mr. G. E. McLaughlin, Information Officer, New York State Pure Waters Authority, 41 State Street, Albany, New York.

Mr. James E. McShane, Emergency Program Officer, Atlantic Coast District, Department of Commerce, 26 Federal Plaza, New York, New York.

OTHERS IN ATTENDANCE: (Continued)

Mr. Charles F. Miles, Jr., Associate Sanitary Engineer, New York State Health Department, 270 Madison Avenue, New York, New York.

Miss Esther Modell, 130 Morningside Drive, New York, New York.

Mr. Joseph Monkoski, Civil Engineer, National Park Service, 143 S. Third Street, Philadelphia, Pennsylvania.

Miss Irene L. Murphy, Legislative Specialist, Federal Water Pollution Control Administration, Department of the Interior, 6616 Millwood, Bethesda, Maryland.

Dr. Alan I. Mytelka, Assistant Chief Engineer, Interstate Sanitation Commission, 10 Columbus Circle, New York, New York.

Mr. Thomas Nanney, American Petroleum Institute, New York, New York.

Mr. Richard Newman, Senior Sanitary Engineer, New York State Department of Health, 2440 E. 29th Street, Brooklyn, New York.

OTHERS IN ATTENDANCE: (Continued)

Mr. Irwin Novick, Chief, Federal & State Aid, New York City Department of Water Resources, 40 Worth Street, Room 1333, New York, New York.

Mr. R. C. Palange, Federal Water Pollution Control Administration, Department of the Interior, Washington, D. C.

Mrs. N. H. Parsons, League of Women Voters, Tri-State Committee - New York Delegate, 420 East 23rd Street, New York, New York.

Mr. Emmitt Phillips, Sales Engineer, Dow Chemical, Park 80 Plaza East, Saddlebrook, New Jersey.

Mr. Paul Preus, President, Clean Water, Inc., P. O. Box 1002, Toms River, New Jersey.

Mr. G. H. Rand, Vice-President, International Paper Co., 220 East 42nd Street, New York, New York.

Mrs. E. S. Renman, 1528 East 53rd Street, Brooklyn, New York.

OTHERS IN ATTENDANCE: (Continued)

Mr. Jerome Resnick, Environmental Engineering Specialist, Monsanto Biodize, 112-20 14th Avenue, College Point, New York.

Mr. Robert J. Richmond, Planner, Tri-State Transportation Commission, 100 Church Street, New York, New York.

Mr. Gilles Robert, Business Manager, Raytheon Co., 33 Union Street, New London, Connecticut.

Mr. Theodore Rogowski, Assistant Solicitor, Department of the Interior, Washington, D. C.

Mr. Eugene Rosoff, Project Engineer, Standard Brands, Inc., Charles Point, Peekskill, New York.

Mr. Charles Samowitz, Principal Engineer, New York City, 40 Worth Street, New York, New York.

Miss Roxanna Sayre, Public Information Office, National Audubon Society, 1130 Fifth Avenue, New York, New York.

Mr. Arthur J. Schor, Assistant Civil Engineer, New York City Health Department, 93 Worth Street, New York, New York.

OTHERS IN ATTENDANCE: (Continued)

Mr. Mark Siegler, Sanitary Engineer, Department of the Navy, 90 Church Street, New York, New York.

Mr. Robert G. Sobeck, Superintendent, Jersey City Sewerage Authority, Route 440 & Culver Avenue, Jersey City, New Jersey.

Dr. Emanuel V. Sorge, President, Biological Consultants, Inc., 6087 Broadway, New York, New York.

Mrs. Mary Spargo, Senior Public Information Specialist, New York State Health Department, 84 Holland Avenue, Albany, New York.

Mr. Donald B. Stevens, Director, Bureau of Water Quality Management, New York State Health Department, 84 Holland Avenue, Albany, New York.

Mr. James J. Sutton, Chief of Engineering Bureau, Military Ocean Terminal, Bayonne, New Jersey.

Mr. Ross F. Sweeny, Civil Engineer, National Park Service, 143 So. 3rd Street, Philadelphia, Pennsylvania.

OTHERS IN ATTENDANCE: (Continued)

Mr. Max Vigil, Urban Planner, Department of Housing and Urban Development, 26 Federal Plaza, New York, New York.

Mr. K. H. Walker, Director, Hudson-Delaware Basins Office, Federal Water Pollution Control Administration, Department of the Interior, Edison, New Jersey.

Mr. Ian Walker, Geologist, Soil Conservation Service, U. S. Department of Agriculture, 1370 Hamilton Street, Somerset, New Jersey.

Dr. M. S. Wecker, Technical Advisor, IBM, 59 Maiden Lane, New York, New York.

Dr. Mitchell Wendell, Counsel, Interstate Sanitation Commission, 10 Columbus Circle, New York, New York.

LCDR C. H. Wentworth, Sanitary Engineer, Third Coast Guard District, Building 107, Room 107, Governors Island, New York.

Mr. James Wentz, District Ship Operations Officer, MARAD, 26 Federal Plaza, New York, New York.

OTHERS IN ATTENDANCE: (Continued)

Mr. Kent A. Williams, Program Director, Environmental Systems, MDC Systems Corp., 250 Broadway, New York, New York.

Mr. Albert T. Wurth, Chief Engineer, U. S. Public Health Service Hospital, Bay Street & Vanderbilt Avenue, Staten Island, New York.

CDR John W. Yager, U. S. Coast Guard, Third Coast Guard District, Building 125, Governors Island, New York.

PRESS:

Miss Mary Ansbro, Water in The News, Soap & Detergent Association.

Mr. Dave Bird, The New York Times.

Mr. Jesse Brodey, New York News, P. O. Box 115, North White Plains, New York.

Mr. Thomas M. Donoghue, Associate Editor, Air & Water News, 330 West 42nd Street, New York, New York.

Mr. Sam Gronner, Newark News, 215 Market Street, Newark, New Jersey.

PRESS: (Continued)

Mr. Tom Hester, The Jersey Journal, Journal Square, Jersey City, New Jersey.

Mr. Gladwyn Hill, The New York Times.

Mr. Marion J. Klawonn, Associate Editor, Engineering News Record, 330 West 42nd Street, New York, New York.

Mr. Peter Kohler, Editorial Associate, WCBS-TV, 51 West 52nd Street, New York, New York.

Mr. Robert A. Martin, Jr., Associated Press, Rockefeller Center, New York, New York.

Mr. Kenn Moses, MCR Public Service, WNBC, 30 Rockefeller Plaza, New York, New York.

Mr. Thomas Nanney, Editor, Air & Water Conservation News, Time-Life Building, New York, New York.

Mr. John Palmer, WNBC-TV, New York, New York.

Mr. A. H. Parachini, United Press International, 220 East 42nd Street New York, New York.

Miss Ania Savage, The Record, Bergen County, New Jersey.

PRESS: (Continued)

Mr. Irvin Schwartz, Environment Editor, Chemical Week, 330 West 42nd Street, New York, New York.

Miss Harriet Shapiro, Look Magazine, 488 Madison Avenue, New York, New York.

Mrs. Mary Spargo, Managing Editor, New York State Waters, New York State Department of Health, 84 Holland Avenue, Albany, New York.

Miss Barbara Spector, Maritime Reporter, Newark News, 215 Market Street, Newark, New Jersey.

Mr. R. C. Taplin, The Record, 55 East Central Avenue, Pearl River, New York.

PROCEEDINGS

OPENING STATEMENT
BY
HONORABLE CARL L. KLEIN
ASSISTANT SECRETARY OF THE INTERIOR
FOR WATER QUALITY AND RESEARCH

SECRETARY KLEIN: Good morning. My name is Carl Klein. I am the Assistant Secretary of the Interior for Water Quality and Research. I shall be the Chairman of the Conference this morning with Mr. Murray Stein ably assisting me, and after this morning Mr. Stein will be the Chairman of the Conference to its conclusion.

The conference is now open.

The third session of the conference in the matter of pollution of the interstate waters of the Hudson River and its tributaries in the States of New York and New Jersey is being held under the provisions of Section 10 of the Federal Water Pollution Control Act, as amended. Under the provisions of the Act, the Secretary of the Interior is authorized to initiate a conference of this type when requested to do so by a Governor of a State and when on the basis of reports, surveys, or studies, he has reason to believe that pollution subject to abatement under the Federal Act is occurring.

In 1965, in accordance with requests from Nelson A. Rockefeller, Governor of New York, and Richard J. Hughes, then Governor of New Jersey, and on the basis of reports, surveys or studies, the first session of this conference was initiated. It was held on September 28-30, 1965. The second session of the conference was held on September 20, 1967, about two years ago. Not quite two years have passed and we are back again.

Both the State and Federal governments have responsibilities in dealing with water pollution control problems. The Federal Water Pollution Control Act declares that the States have primary rights and responsibilities for taking action to abate and control pollution. Consistent with this, we are charged by law to encourage the States in these activities.

At the same time, however, the Secretary of the Interior is charged by law with specific responsibilities in the field of water pollution control in connection with pollution of interstate and navigable waters. The Federal Water Pollution Control Act provides that pollution of interstate or navigable waters which endangers the health or welfare of any persons, shall be subject to abatement. This applies whether the matter causing or contributing to the pollution is discharged directly into such waters or reaches such waters after discharged into a tributary.

The purpose of this conference is to bring together the State and interstate water pollution control agencies, representatives of the U. S. Department of the Interior, and other interested parties to review the existing situation, and the progress which has been made, to lay a basis for future action by all parties concerned, and to give the States, localities and industries an opportunity to take any indicated remedial action under State and local law.

At the last session of the conference in 1967, the conferees agreed that the interstate waters of the Hudson River are polluted as a result of the discharges of inadequately treated municipal and industrial wastes. They further agreed that considerable progress has been made toward abating the pollution problem, and the programs underway, when carried to their logical conclusion, will abate and control this pollution.

Certainly the progress which has been made so far in cleaning up the Hudson River is due in large part to the aggressive pollution control program of the

State of New York. The application of New York's financing program and its strict pollution control legislation have resulted in real progress toward achieving our common goal of clean water.

Today the New York State Department of Health will be represented by Mr. Dwight Metzler; the New Jersey State Department of Health will be represented by Mr. Richard Sullivan; and, the Interstate Sanitation Commission will be represented by Mr. Thomas Glenn.

The Federal conferee is Mr. Lester Klashman.

The parties to this conference are the official State and Interstate water pollution control agencies and the U. S. Department of the Interior. Participation in this conference will be open to representatives and invitees of these agencies and such persons as inform the Conference Chairman that they wish to present statements. However, only the representatives of the State and interstate water pollution control agencies and the U. S. Department of the Interior constitute the conferees.

Now, a word about the procedures governing the conduct of the conference. The conferees will be called upon to make statements. The conferees, in addition, may call upon participants whom they have invited to the conference to make statements. In addition, other interested individuals who wish to present statements will be called upon. At the conclusion of each statement, the conferees will be given an opportunity to comment or ask questions, and the Chairman may ask a question or two. This procedure has proven effective in the past in reaching equitable solutions.

At the end of all the statements, there will be a discussion among the conferees and they will try to arrive at a basis of agreement on the facts of the situation.

Under the Federal Law, the Secretary of the Interior is required at the conclusion of the conference to prepare a summary of it which will be sent to the conferees. The summary, according to law, must include the following points:

1. Occurrence of pollution of interstate waters subject to abatement under the Federal Act;

2. Adequacy of measures taken toward abatement of pollution; and

3. Nature of delays, if any, being

encountered in abating the pollution.

The Secretary is also required to make recommendations for remedial action if such recommendations are indicated.

The Secretary is not without power when abatement does not take place on interstate waters.

Under the law, he can call a public hearing if reasonable progress to abate pollution is not being taken. Then, if necessary, he can turn the matter over to the Attorney-General for court action.

Please rest assured that the Secretary intends to enforce the law and take such recourse, if necessary.

Copies of the summary and transcript will be made available to the official State and interstate water pollution control agencies. We have generally found that, for the purpose of maintaining relationships within the States, the people who wish summaries and transcripts should request them through their State or interstate agency rather than come directly to the Federal Government. The reason for this is that, when the conference has been concluded, we would prefer people who are interested in the problem to follow their normal relations in dealing with the State agencies rather than the Federal Government.

To conclude my opening remarks, I would like to congratulate Governor Rockefeller for his vigorous and unflagging support in the common effort to restore clean water to our citizens. Under his leadership, the people of the State of New York have embarked on what is no doubt the largest single water pollution control program in the world.

I am told that New York's ambitious "Pure Waters" program has now reached its halfway mark. In 1965, some 1,098 private and public sources of pollution from domestic wastes were identified. Today, at the halfway mark, 726 of these have been either corrected or are actively in the process of being corrected. This means that some 62 per cent of the pollution from domestic wastes has been reached.

The story on industrial pollution is also most encouraging. Of the total 225 industries found to be polluters, 131 appear to have fully complied with abatement requirements and 51 more are making satisfactory progress. This would mean that some 83 per cent of the industrial pollution sources has been reached, and I am further told that the remaining polluters are facing firm State action on abatement.

I would also want to congratulate the State of New Jersey for its thus far successful lawsuits in its campaign to help clean up the Hudson, and I take heart that this is a most gratifying picture, particularly when we contemplate that a growing population, industrial expansion, the needs for more power to meet population demands, the trend toward more and larger nuclear plants, the proliferation of solid wastes--all combine to continuously confront the State with new water problems.

Positive and vigorous State leadership, coupled with effective local-State-Federal cooperation and firmly supported by an enlightened public opinion, can indeed take us such a long step toward the common goal of a cleaner environment, and, thus, a better life.

If we now all pitch in together, the Hudson, too, will soon run clean again.

It has been our practice in the past to hear from the Governor of the State where we are meeting first. As you know, New York State Governor Nelson A. Rockefeller is not here. Thereafter, we have asked visiting dignitaries from the area for their comments before the Federal Water Pollution Control Administration puts in its case. Thereafter, other Federal agencies will be heard and then we will go to the different States and the interstate agency for their comments and the people who are on their roster for speaking.

Today, our first speaker for Governor Nelson Rockefeller is Dr. Hollis Ingraham, the Commissioner of Health of the State of New York.

Dr. Ingraham.

STATEMENT BY
HON. NELSON A. ROCKEFELLER
GOVERNOR
STATE OF NEW YORK
READ BY
DR. HOLLIS S. INGRAHAM
COMMISSIONER
NEW YORK STATE DEPARTMENT OF HEALTH

DR. INGRAHAM: Mr. Klein, Conferees, ladies and gentlemen:

As Mr. Klein said, the Governor is in South America and is quite unable to be here. Otherwise, I am sure he would have been here since he has appeared at the previous conferences, and the control of water pollution is one of his great interests, so I am reading his statement in his absence.

The Governor asked me to say:

It is a personal pleasure to have this opportunity to welcome Assistant Secretary Carl L. Klein of the U. S. Department of the Interior to New York State on his first official appearance and to extend the most cordial greetings to all participants at this third session of the Conference and to wish them well in their deliberations.

The Goal and the Challenge.

We in New York State government are well aware that we cannot go it alone in controlling pollution of 70,000 miles of streams, more than three and-a-half-million acres of inland lakes, and miles of ocean front.

The necessary investment of Federal, State and local resources to halt water pollution must be made now.

It is essential that we move now to protect the health, both economic and personal, of our families, our children and their children--the children who will enjoy the birthright of a clean and healthy America.

We are confronted with a complex task to conserve our waters even as we use them more and more--pollution, an indefensible exploitation, must be stopped.

The New York State Response.

The Federal Water Pollution Control Act, which authorizes these enforcement conferences, makes it clear, as Assistant Secretary Klein recently declared, "that the initial responsibility for controlling pollution belongs to the States."

New York State and its people willingly have shouldered that responsibility. The people of the State of New York have endorsed, encouraged and supported with their dollars and with dedicated voluntary efforts one of the most innovative and imaginative programs of water pollution abatement ever undertaken anywhere in the world.

The voters, in 1965, approved a $1 billion bond issue for the construction of water pollution treatment plants throughout the State by an overwhelming 4 to 1 margin. A target date of 1972 was set for getting construction underway. Consequently, New York State pioneered in offering State aid to local communities for construction and in prefinancing the Federal share of the cost.

The continuing enthusiasm of New York State citizens for the Pure Waters Program is clearly shown in a recent report to me by the Director of the Women's Unit. The Women's Unit, which is part of the Executive Chamber, directs a citizen's volunteer program which has resulted in discussions on environmental pollution control with over 30,000 interested citizens in the last year alone. The interest and enthusiasm of the participants for the State's Pure Waters Program has been described by Mrs. Evelyn Cunningham, the Women's Unit director, as "overwhelming".

The Women's Unit has been active in coordinating programs to acquaint the State's citizens, through field trips, forums, films, plays and analysis of legislation, on the need to abate pollution.

The New York State Pure Waters Program.

The New York State Pure Waters Program was devised as the most effective way to remove immediately a serious and growing barrier to economic and community growth, and to the full enjoyment by the people of the State of New York of their vast water resources.

We are pleased with the achievements we have recorded at the midway point in the program.

First, one hundred and sixty-four waste treatment construction projects have been completed or are under active construction at a cost of more than $621 million. These projects have received or will receive more than $331 million of State contributions.

In addition, 49 projects are listed as under final design and 126 are in the preliminary design state. The program will provide over $300 million in State funds to help municipalities meet construction costs of more than $528 million for these projects.

Second, of 1,100 private and public sources of pollution from domestic wastes identified at the beginning of the program, all major polluters are now under orders from the State Health Commissioner to abate pollution.

Third, since many municipalities lack sufficient resources to respond fully to the responsibilities and challenges of the Pure Waters Program, no matter how willing they might be, the State Pure Waters Authority was created in 1967 in response to local needs.

The Pure Waters Authority helps local

governments bear the financial and technical burdens necessary in implementing the Pure Waters Program. The Authority has the power to undertake planning, financing, construction, maintenance and operation of sewage treatment works and solid waste disposal facilities for and on behalf of municipalities.

In the comparatively short time since its creation, the Authority is in official or contractual relationships with municipalities in an amount totaling more than $100 million.

Fourth, 65 per cent of the State's municipalities have applied for operation and maintenance grants that provide State aid for one-third of the cost of ongoing local plant operations. Thus far, nearly $26.4 million have been reimbursed to municipalities operating sewage treatment facilities in a manner acceptable to the State Health Department.

Fifth, the State's 100 per cent financed comprehensive public sewerage and water supply studies are completed or underway in nearly all of the counties in the State.

Sixth, New York State is continuing its research projects in an effort to find new methods of coping with pollution problems in the Hudson River Basin, including the development of a mathematical model depicting physical, biological, hydrological and chemical interrelationships of the Hudson River that will be completed by the end of 1969.

The Need for Federal Help.

New York has and is continuing to prefinance much of the Federal share of these projects, on the assumption that we will be repaid when the Congress is able to appropriate the funds required for adequate implementation of a basic national program of water pollution control.

Initially, the Federal-State partnership on water pollution control contemplated what was known as the 30-30-40 formula. The State was to supply 30 per cent of the cost of new municipal and intermunicipal plants; the Federal Government another 30 per cent, and the local agency the balance of 40 per cent. In 1966, the Congress authorized prefinancing by the states. Under this authorization and because adequate Federal funds have not been appropriated, the State of New York has prefinanced up to 29 per cent of the Federal share in much of the treatment plant construction in the State. I have called on numerous occasions for Congressional action to appropriate adequate funds for water pollution control.

The maximum Federal share authorized in 1966 can reach 55 per cent if certain conditions are met. Projects in New York State meet all these conditions and thus are eligible for a full 55 per cent Federal grant.

I urge the Administration to help states obtain the resources they need to end water pollution.

Conclusion.

Again, I welcome you most cordially. I pledge the continuing efforts, the full cooperation and good will of the State of New York in controlling and ultimately eradicating the pollution that has so criminally blighted so much of our Nation's vast wealth of waters.

Thank you, Mr. Chairman.

SECRETARY KLEIN: Thank you very much, Dr. Ingraham.

For Congressman William F. Ryan, we have Mrs. Jean Faust. Congressman Ryan was unexpectedly called back to Washington. We had expected the pleasure of his personally being here, but he has asked Mrs. Faust to present his statement.

Mrs. Faust.

I might add that if any of you have copies of the speeches, would you please let us have them, both for the Court Reporter, the conferees and for the press.

STATEMENT BY
CONGRESSMAN WILLIAM F. RYAN
UNITED STATES HOUSE OF REPRESENTATIVES
WASHINGTON, D.C.
READ BY
MRS. JEAN FAUST
ASSISTANT ON ENVIRONMENTAL POLLUTION

MRS. FAUST: Mr. Klein, Conferees, ladies and gentlemen:

My name is Jean Faust. I am Assistant on Environmental Pollution to Congressman William F. Ryan.

Mr. Ryan regrets he cannot be here in person, but he had to return to Washington because of a vote in which he was very interested coming up on the Floor this morning.

This is his statement:

As a member of the House Committee on Interior and Insular Affairs, I have long been seriously concerned about the squandering of our resources of air and water and the persistent, heedless fouling of these two human necessities.

The first two sessions of this Hudson River Enforcement Conference, in 1965 and 1967, compiled a record of shameful misuse of this once-mighty river, now a sewer.

Local industry, local public facilities, State agencies and Federal facilities--all flouting existing laws--contributed and are still contributing to the degradation of a precious natural resource, one of our Nation's greatest waterways.

The magnitude of the problem mandates Federal, State, local and interstate cooperation and this conference method is a fine tool for restoring the river--but only if used with determination and forcefulness.

On the Federal level, concern and determination to reverse the destruction of the Nation's water resources have been demonstrated in the Water Pollution Control Act of 1965 and the Clean Waters Restoration Act of 1966.

On the State level, the Pure Waters Program constitutes a comprehensive plan for attacking pollution of the Hudson.

New York City has long pursued a broad and complex plan of water pollution control, but population growth, increasing industrial uses and the demand of citizens for recreational facilities has always exceeded the financial and technological ability of the city to keep pace with demand.

Citizens have organized numerous conservation groups and committees and their support of water pollution control has been unmistakably expressed in their four to one approval of the billion-dollar Pure Waters Bond Issue in November 1965.

Then, what is causing the delay in cleaning up the Hudson? Why, in spite of the big push beginning in 1965, are we still facing the possible death of the Hudson?

In the Ecological Survey of the Hudson River, dated September 30, 1968, G. P. Howells of the Department of Environmental Medicine of New York University Medical Center says "I would liketo put forward the view that a large part of the lower Hudson River has the characteristics of a eutrophic brackish lake; the hydrographic conditions may prove critical in the biological sense."

And: "The relatively high sulphate from sea water intrusion and nitrate both from added sewage and feeder tributaries in the Hudson River means that anaerobic or near anaerobic conditions may tip the balance between a healthy river and a noxious one producing hydrogen sulphide and ammoniacal gases."

For the same study, coliform counts as high as 18,000 per 100 milliliters were found in July-August of 1967, and some of the highest counts were near the shore. Though counts were lower in some instances than those found by the Public Health Service in its 1965 study, the biological condition of the river was still serious enough to warrant the statements quoted above.

In an attempt to place in the record some of the possible explanations for delay in turning back the tides of pollution, I would like to discuss in some detail the variety of problems surrounding a project which falls within my district, the North River Water Pollution Control Project at 137th to 145th Streets on the Upper West Side of Manhattan.

In a long and involved, sometimes tedious, stream of meetings, correspondence, statements and testimony dating back to the beginning of this decade, I have on behalf of my constituents confronted problems concerning this project on every level of activity. To Secretary Udall, Governor Rockefeller, Mayor Lindsay, the Commissioner of Public Works, the New York City Board of Estimate, and finally the Environmental Protection Administration, I took the objections of the community as well as detailed analyses of my own concerning the site of the plant and the obsolete design. I also met with local planning boards, community leaders and local elected officials. I prepared numerous statements, detailing the community's objections as well as my own objections to the site and to the design, which did not meet either Federal or State standards when originally approved.

At this point, I am submitting copies of Congressman's Ryan's testimony before the New York City Board of Estimate on April 4, 1968 and his memo to Secretary Udall of April 18, 1968. These two statements cover in detail the objections to the site and to the project design. However, since they are in the past, I am not reading them today, but simply submitting them for the record.

I consider it a betrayal of the public trust and a failure of responsibility that New York City offered, and Federal and State agencies adopted, a design that was clearly below standard, that would never meet the growing need.

Therefore, even after approval, I continued to advise Secretary Udall, Governor Rockefeller, Mayor Lindsay and Environmental Protection Administrator Eisenbud of my strenuous objections to the project.

It is gratifying to report that, after this history of contention between the various groups that need to cooperate to overcome the blight of pollution, New York City officials began to move into dialogue with the community. At the same time, further studies were made and a design study indicated that, after all, the plant could be designed to meet Federal and State standards and recommendations of this Conference. It is my present understanding that the new design will comply with these specifications.

To compensate the community for placing an unusually large pollution control project in a residential area despite the most vigorous opposition, New

York City has brought together city and State Parks Department officials and has promised to develop the entire area from 125th to 155th Streets as a parks and recreational area. A feasibility study, called RIVERBANK, has been presented to the community and a community conference will be held at the end of this month to give the community an opportunity to register its reaction to the proposal.

I here submit a copy of the RIVERBANK proposal.

(The above mentioned document, marked Exhibit 1, is on file at Headquarters, FWPCA, Washington, D. C., the Northeast Regional Office, Boston, Massachusetts and the Hudson-Delaware Basin Office, Edison, N. J.)

Along with many other community leaders and elected representatives, I support the use of this area for parks and recreation. Since the West Side Highway is elevated at 125th Street, this is one of the few places where there is direct access to the river. The community has pleaded for years for just such a parks development.

The community, in spite of disappointments of the past, is accepting on good faith the commitment of New York City and New York State to build this park.

I would like this Conference to reinforce that commitment by supporting the concept of developing the area for parks and recreation within the shortest possible time, both concurrent with and following construction of the plant. Lengthy delay or further disappointment would be intolerable.

Another apparent cause of delay in control of pollution is the tendency to be content with doing more than was done last year or doing more than another city or State has done. If a city is more polluted than any other city, it is meaningless to state grandly, "This city has done more than any other city." The same applies to a State. The magnitude of an abatement program must equal the magnitude of the particular problem. It is not enough that progress has been made, that abatement programs have been initiated and improved. The extent of pollution is extraordinarily grave; extraordinary action is required. Control agencies may not congratulate themselves for improvements; they may congratulate themselves only on what proportion of the job has been accomplished. The perception of a problem affects the solution that is developed; if perception permits pride in progress that is large by past standards, but small in comparison to present and future need, then solution of the problem of pollution will be slower than society can tolerate and delay will lead to rivers that continue to decay even after progress has been made in an abatement program.

Conferees on every level agree that lack of funds is a major cause of delay. It is only too well known that the Federal Government has failed to carry its share of the fiscal burden. On the North River Project alone, this failure is amply demonstrated; as of May, 1969, the percentages were New York State, 60 per cent; New York City, 39 per cent; the Federal Government, 1 per cent.

A consideration of the larger picture is just as depressing:

1968: Authorization, $450 million; New York share would be $37,617,750; Appropriated, $203,000,000; New York share, $15,492,710;

1969: Authorization, $700 million; New York share would be $60,699,200; Appropriated, $214,000,000; New York share, $15,828,000;

1970: Authorization, $1 billion; New York share would be $88,397,100; Appropriation has not been decided. However, President Nixon has asked for $214 million, the same as last year.

Since the estimate for national requirements for costs of constructing municipal waste treatment plants and interceptor sewers for FY 1969-1973 has been placed at $8.0 billion (exclusive of land and associated costs), lack of Federal funds is indeed a serious block to abating pollution.

I believe that Congress must find the money to pay its promised share of pollution control and I shall do my best to see that this is done.

Another serious problem confronting control agencies is the polluting effect of combined sewers. Since study of this problem is in the early stages, no definite solution can be suggested. However, I am inclined to believe that Auxiliary Pollution Control Plants are merely a stop-gap measure. The long-term answer will probably be separate storm and sanitary sewers. I think this is the solution we must work towards and I plan to work actively in the Congress to help states and localities solve this problem.

Having promised twice in this statement to try to obtain more Federal funds for New York State water pollution control, I want to add this cautionary note: Just as I fought past what seemed the losing point to make sure that any plant built in my district would be of the most efficient possible design, so I would fight in every case. I will always insist that every project meet not only standards of Federal, State and interstate agencies, but also those of conferences like this one, which would presumably have the advantage of latest data. Further, I will always insist on most strict standards. I believe we will find it necessary to continually upgrade our efforts and in long-range projects, we should aim for the highest efficiency.

We can, and we must, restore the Hudson River. We must make it not only safe, but beautiful again.

Just as we condemn those who came before us for being so careless and heedless and greedy as to make our river a sewer, so those who come after us will condemn us--unless we reverse the trend.

New York has done well, but it must escalate its control efforts to meet the gravity of the problem. Progress must be faster and in higher ratio to the extent of the problem.

Thank you for this opportunity to express my views.

Mr. Chairman, I have only one copy of this very fancy brochure on RIVERBANK to submit.

SECRETARY KLEIN: Would you give it to the Court Reporter, please, and we will put all of your exhibits into the record.

MRS. FAUST: Thank you.

(The following statements were submitted for inclusion in the record:)

STATEMENT BY CONGRESSMAN WILLIAM F. RYAN
1040 St. Nicholas Avenue
New York, New York 10032
212-UN-4-1106
Contact: Jean Faust, UN 4-1106
Testimony before the New York City Board of Estimate
April 4, 1968
RE: Capital Project P. W. 164, North River Pollution
Control Project

The proposed location of the North River Pollution Control Project on the Hudson River between West 138th and West 145th Streets lies within my congressional district; and the people who have been appearing before you, not only today, but time after time in previous hearings, are my constituents. On their behalf, I wish to register in the strongest possible terms my complete opposition to this project, to its location, to its technical design, and to the attempt to camouflage the stark ugliness it would bring to the shoreline.

The residents of the community object most strenuously to the location of the plant at their front doors. And, since the West Side Highway is elevated at this point, one of the few places along the Hudson where there is direct access to the river bank would be lost to the use of the residents.

This is a racially and economically integrated neighborhood where widely different peoples live together in harmony. The community has great aspirations for improvement; it has been pleading for parks and playgrounds and other recreational facilities. Instead, it is offered a sewage treatment plant, with maybe some time in the future a playground park where the children can get really close--not to the lovely vistas of one of the most beautiful rivers of the world--but right up close to a sewage treatment plant.

To assuage the feelings of the community, the City proposes an architectural cosmetic treatment; an overlay of reflecting pools and towering fountains. No doubt these effects were intended to uplift. However, in reality, they would quite effectively destroy the natural aesthetic feeling of the river view. Instead of allowing the eye to contemplate the horizontal length of river and shoreline, thus enjoying the restful and spiritually rewarding benefits of such contemplation, the fountains would force the eye upwards, thus directly conflicting with the natural view. The spectator would be minimized, overwhelmed.

These twenty-two acres of white concrete would completely dominate the visual sweep of the shoreline for miles. It is difficult to imagine what it would be like to get up in the morning and look out the window to behold twenty-two acres--eight city blocks--of white concrete and reflecting pools reposing in the early morning sun.

We can, of course, reassure ourselves on this point: knowing the concentrations of soot and fly ash that are poured into the air of New York City each year, we can relax--the soot would reduce the glaring white to a comfortable, light-absorbing, dirty grey in a short time. And the reflecting pools would be very quickly covered with a thick layer of oily particulates through which they would have very little opportunity to reflect--even if there were anything to reflect except towering fountains and sludge tanks.

In the rapidly escalating de-humanization of our urban environment, this is no doubt a landmark achievement.

Believing as I do that all the citizens of our urban areas should be able to trust their city planners, their administrators, and their governmental officials to protect their interests and provide a livable environment, I simply cannot reconcile this belief with the attitude of the New York City administration as expressed in the words of Mr. Martin Lang, of the Department of Public Works, spoken before a Town Meeting of the League of Women Voters on December 7, 1967. While enthusiastically describing the City's plans for reducing water pollution, Mr. Lang assured his listeners--in a hall on East 35th Street, in an area where they could not know the facts--that this plant is not only an important contribution to pollution control, it's part of the City's Urban Beautification Program!

His audience on East 35th Street simply could not appreciate his remarks; I have asked time and again that the City hold a community meeting to allow the residents to express their objections to this project.

It would be interesting, should such a meeting finally be held, to see how the residents of West 138th Street would appreciate Mr. Lang's remarks.

Concerning the site, the Hazen and Sawyer "Plant Site Review" dated March 19, 1968, stated that "waterfront sites at 57th and 66th Streets appear to be the most promising alternates from the standpoint of cost, minimum interference with parks, and public acceptability." In discussing these sites, Hazen and Sawyer estimate that they would be cheaper than the proposed site in construction cost of interceptor, construction cost of pumping station and plant, as well as in other costs.

Sludge barging would be less costly as the site moved further downtown; savings would amount to between $15,000 and $100,000 per year, according to Hazen and Sawyer.

A study by Joseph S. Ward and Associates indicated that foundation costs would also be substantially lower at the downtown sites.

At the proposed location, there would also be additional millions in the architectural cosmetic treatment of the plant itself, and the park, suggested as a sop to the community, neither of which has been included in current estimates.

Yet, in spite of the evidence of their own figures, Hazen and Sawyer conclude the plant should not be moved because it would cause a delay in the City's program of pollution abatement. But will this plant do the job that needs to be done?

With reference to standards of water quality, the Water Quality Act of 1965 (Public Law 89-234) provided that "the appropriate State authority shall take into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes and agricultural, industrial, and other legitimate uses."

Following the September 20-21, 1967, Hudson River Enforcement Conference, New York, New Jersey, the Interstate Sanitation Commission, and Federal conferees agreed and recommended that "All wastes prior to discharge into the waters covered by the conference shall be treated to provide a minimum of 80 per cent reduction of biochemical oxygen at all times. It is recognized that this will require a design for an average removal of 90 per cent of BOD..."

Does the North River Pollution Control Project design meet this standard?

The North River plant is designed for "short period aeration"--this is modified aeration operated at unusually short detention time.

In a study made by Quirk, Lawler & Matusky, dated February 1967, we find that "Analysis of short period operating data available from the City and of North River facilities indicates yearly average removal of dissolved oxygen consuming organic material (BOD) may be expected to range between 50 and 55%."

The same engineers studied modified aeration at the Owls Head plant with the following results: "The foregoing analysis of existing short period performance data shows short period aeration is an effective means of intermediate treatment and can be expected to remove roughly 50 per cent of influent sewage BOD."

The same study compared activated sludge plants with the modified aeration process and concluded that, operated under prescribed conditions, sludge plants may be expected to impart 85 to 95 per cent BOD removals. The study further commented: "Conventional activated sludge imparts a high degree of treatment, but, correspondingly, involves a relatively high dollar outlay for construction and operation. In the early 1940's, Setter, then Principal Sanitation Chemist, Bureau of Sewage Disposal Operation, New York City Department of Public Works, developed a modification of the process which yielded a stable degree of treatment in the intermediate range, i.e. 60 to 80% removal of BOD. This process is known as modified aeration and has found use where a high degree of treatment (over 80%) is not needed to meet quality standards in the receiving water body."

We have already found in the same report that only 55% removal of BOD is expected at North River. And we know that the standards call for 80% removal.

Has New York City chosen to follow plans set into motion more than twenty years ago, without taking newer technology into consideration? Has New York City chosen, on the basis of cost--in the richest city in the world--to settle for "intermediate treatment"? Can we afford to accept a process described by engineers as being used where a high degree of treatment is not necessary?

Research, hearings and conferences of the past several years indicate that, in order to combat rising dangers from water pollution due to exploding population and ever-increasing industrial wastes, sewage must be treated at ever higher levels in order to produce the water quality specified by law. Yet, in this instance, New York City is determined to construct a plant that is not even expected--in design--to meet current standards. And the level of treatment actually maintained in operation is not usually up to design standard.

New York State Assemblyman Albert Blumenthal reports that, in discussions with the Health Committee, Mr. Dwight Metzler, Deputy Commissioner of the New York State Department of Health, conceded that the design for the North River Pollution Control Project will not meet the State's standards.

Both the City and the State are compromising standards rather than providing the level of treatment that regulations specify.

Besides the laws that set water quality standards, another Federal law, Public Law 89-605, which created the Hudson River Basin Compact, would be violated by this project. The intent of this law is to promote the restoration of the former beauty of the Hudson River. This beauty was once the subject of poetry; now it is likely to become the subject of bitter jokes featuring vistas of sewage disposal plants.

In its original design, the twenty-two-acre plant would displace eight city blocks of shoreline (not to mention the additional 2.8 acres and the 4.9 acres which the City intends to acquire at some later date--but has not yet so advised the community). All this at one of the few places in the City where there is direct access to the river.

Instead of building a sewage treatment plant, with concomitant threat of odors, ozone problems, and disruption of the shoreline, the City should be planning the restoration of the Hudson to its pre-industrial era splendor, with green trees, grass and flowers--instead of expanses of shock-white concrete. In order to reduce one problem, water pollution,should the City create another; odor nuisance and pollution of the view for boaters and area residents?

The City claims there will be no problem with ozone. However, Dr. Gerald E. Gaull, of the College of Physicians and Surgeons of Columbia University, who has discussed ozone with Dr. Bernard Saltzman, of the Taft Center for Air Pollution research in Cincinnati, presents a different view: the possibility of lung damage, the threat of cancer, the danger of breakdown in chromosomes, representing one of mankind's greatest fears: transmissable genetic defects.

It is the possibility of such dangers, as well as the understandable psychological rejection of a front-yard sewage plant, that has produced the highly emotional reaction of the community. Perhaps feelings would not have reached this pitch if the City Administration had been receptive to the requests for a hearing in the community or if the Administration had communicated more directly and frankly with the residents.

I urge the Board of Estimate to insist that the City completely review this project, select the appropriate site from every standpoint including cost, efficiency of operation, and public acceptability. And we must insist that the final design conform to Federal and State standards for water quality.

* * *

April 18, 1968

MEMORANDUM CONCERNING THE NORTH RIVER WATER POLLUTION CONTROL PLANT

TO: The Honorable Stewart L. Udall, Secretary of the Interior

FROM: William F. Ryan, Member of Congress, 20th District, New York

The proposed North River Water Pollution Control Plant should not be approved by the Secretary of the Interior for the following reasons:

1. Community Objections

The proposed location between 137th Street and 145th Street on the Hudson River (in reality it is between 135th Street and 145th Street--which has never been told to the community) is adjacent to a racially and economically integrated residential community.

The community through its elected public and party officials, leaders of community organizations, and *ad hoc* committees has objected most strenuously to the proposed site and the plan to deposit a sewage treatment plant at its front door.

There is also bitter resentment because the project was originally to have been built at 70th Street, and plans were drawn for that location. Instead, it has been "dumped" in West Harlem.

Assistant Secretary of the Interior Max Edwards met with local community leaders and elected public officials on March 9, 1968. He agreed to examine the issues raised and to report back before any further action would be taken by the Department of the Interior.

The site is at a point where there is direct access to the Hudson River bank, the West Side Highway being elevated; and the community had looked forward to the development of this area for recreational use.

The 22-acre plant would displace eight city blocks of shoreline (plus an additional 2.8 acres and 4.9 acres which the City intends to acquire at some later date). Thus, the City is planning to create a 30-acre blight on the Hudson River Shoreline. And the architectural treatment will destroy the natural aesthetic feeling of the river view. Whereas the natural effect of a river shoreline is horizontal, presenting rolling vistas to the eye, the artificial effect of the proposed design is vertical--towering fountains and sludge tanks. Residents using the projected park would be overwhelmed and minimized--as they already are by living among towering buildings. Thirty acres of white concrete, fountains and reflecting pools will dominate the visual sweep of the shoreline for miles, ruining the view.

The odors which the plant may produce are a potential nuisance--all the more so because they will be carried into the community by the prevailing westerly winds.

In an effort to control the odor, the

exhaust air from the ventilating system is to be mixed with ozone, which may create a health hazard.

Dr. Gerald E. Gaull of the College of Physicians and Surgeons of Columbia University, who has discussed the question of ozone with Dr. Bernard Saltzman of the Taft Center for Air Pollution Research in Cincinnati, has pointed out the possibility of lung damage, the threat of cancer, the danger of breakdown in human chromosones--representing the fear of transmissible genetic defects.

The potential threat to health should be thoroughly analyzed.

2. Alternate Sites

Other sites would be less expensive to build and operate. The Hazen and Sawyer "Plant Site Review" dated March 19, 1968, stated that "waterfront sites at 57th and 66th Streets appear to be the most promising alternates from the standpoint of cost, minimum interference with parks, and public acceptability." In discussing these sites, Hazen and Sawyer estimate that they would be cheaper than the proposed site in construction cost of interceptor, construction cost of pumping station and plant, as well as in other costs.

Among other "other costs" Hazen and Sawyer did not consider are costs of the architectural cosmetic treatment: the fountain and pool treatment is estimated to cost $12 to $15 million; the park is estimated to cost $16 to $20 million. Thus, the additional costs--at this site--of initial construction could run up to $35 million.

Sludge barging would be less costly as the site moved further downtown; savings could amount to between $15,000 and $100,000 per year, according to Hazen and Sawyer.

A study by Joseph S. Ward and Associates indicated that foundation costs would also be substantially lower at the downtown sites.

3. Non-compliance with Federal and State Standards.

The plant design does not meet Federal and State Standards.

Following the September 20-21, 1967, Hudson River Enforcement Conference, New York, New Jersey, the Interstate Sanitation Commission and Federal Conferees agreed and recommended that "All wastes prior to discharge into the waters covered by the conference shall be treated to provide a minimum of 80% reduction of biochemical oxygen demand at all times. It is recognized that this will require a design for an average removal of 90% of BOD..."

Standards submitted by New York State and approved by the Secretary of the Interior on August 7, 1967, require secondary treatment of municipal waste as a minimum. Secondary treatment is defined as a process which removes BOD in the range of 75 to 95 per cent.

Senator Robert F. Kennedy at the Conference on September 20, 1967, pointed out that the design will not provide secondary treatment, and he recommended that the Federal Government reject the plan and work with New York City to develop alternatives.

A process design analysis and an evaluation of the effect of the plant on pollution abatement were presented to New York City on February 20, 1967, by Quirk, Lawler and Matusky, Engineers. This study makes it clear that the design is for a short period aeration plant in which the "yearly average BOD removal may be expected to range between 50 and 55%." (p. C-8)

The Quirk, Lawler and Matusky analysis makes the point several times:

"New York City Department of Public Works

> projection indicates 53% removal of influent five-day BOD after 33 minute aeration, at a Gould sludge age of 0.2 days." (p. C-4)
>
> "At the design flow of 220 mgd, the aeration system at North River can be expected to effect a BOD removal comparable to Owls Head, e.g. 50 to 55% on a long term average." (p. C-11)
>
> "...short period aeration is an effective means of intermediate treatment and can be expected to remove roughly 50% of influent sewage BOD." (p. 29)

Although the Hudson River standards call for a design of 90% BOD removal in order to achieve 80% BOD removal at all times, Deputy Commissioner Dwight F. Metzler said in a letter of January 19, 1968, to Assemblyman Albert Blumenthal, Chairman, New York State Assembly Committee on Health, "Because of present site limitations it is impossible to design for 90% removal at this plant. Consequently, the City has agreed to design for 70% removal..."

In the same letter Deputy Commissioner

Metzler said that under the State pollution control program, "Secondary treatment must be provided for all discharges of sanitary waste. We consider a secondary treatment to be that needed to produce a removal of 75 to 95% BOD and suspended solids."

It is apparent that the New York State Department of Health has forwarded an application which fails to meet the requirements of the Hudson River Enforcement Conference and the State standards approved by the Secretary of the Interior.

The Federal Water Pollution Control Act (Section 8(b)(4) states:

> "No grant shall be made for any project under this section unless such project is in conformity with the State water pollution control plan..."

In testimony before the Subcommittee on Air and Water Pollution of the Senate Committee on Public Works on March 27, 1968, Secretary of the Interior Udall in outlining basic principles used by the Department of the Interior said that there shall be no exemptions from the standards for a particular area.

How can the Secretary of the Interior make a grant for a project which is not in conformity with

Federal and State Water Quality standards and which utterly fails to meet the required design for 90% BOD removal in order to achieve 80% BOD removal at all times?

An attempt has been made to justify a grant for the project on the ground that in the future New York City intends to make two additions to the plant.

The first addition, for which no plans have been drawn, is to be built on an additional 2.8 acres which it is contended will permit an extension of the facilities to provide a design capacity for 70% BOD removal.

It is said that a second addition would be built on another 4.9 acres, which has not been acquired but which, it is contended, would provide a design capacity for 90% BOD removal.

No engineering plans or blueprints have been drawn for either addition. There is no assurance that either will be built or, if built, meet water quality standards.

As a matter of fact, the only reference to an expansion of the facilities in the Quirk, Lawler and Matusky study indicates that the BOD removal would be 65%:

> "A 65% BOD removal at North River, representing expansion of the proposed aeration

> facilities, will bring the quarterly average DO to 53% saturation." (p. C-17)

It is interesting to note that 70% BOD removal would be greater than the present average per cent BOD removal in all the rest of New York City's plants (63%) and greater than any of the plants but one (Jamaica--72%) based on an average of the years 1963-1965.

As far as the second addition of 4.9 acres is concerned, it is apparent that the City has no present intention of building on it. It is apparent from a letter dated March 6, 1968, from Eugene E. Hult, Commissioner, New York City Department of Public Works to Rocco Ricci, Chief, Construction Grants Activities (New York, New Jersey and Delaware), Federal Water Pollution Control Administration, Metuchen, New Jersey, in which Commissioner Hult said:

> "The administrative procedure for the eventual relocation of the existing Marine Transfer Station, south of the plant, has been initiated and will provide an additional 212,000 square feet (4.9 acres). This will provide site potential if future upgradings of river standards require it."

(Parenthesis and emphasis added.)

4. Aesthetics--Beauty of the Hudson River

The intent of Public Law 89-605, which created the Hudson River Basin Compact to protect the scenic beauty of the Hudson River, would be violated by the construction of the proposed sewage treatment plant on the shoreline and extending it into the river. The natural resources of the river should be restored and preserved--not desecrated.

(I made this point in my letter of January 15,to Secretary of the Interior Udall and in my letter of February 14,to Associate Director Lawrence N. Stevens of the Bureau of Outdoor Recreation.)

5. The North River Pollution Control Project has not received final approval from the New York City Board of Estimate, the governing body.

Regardless of the merits of design, location and aesthetics, the Secretary of the Interior should not act upon the application for Federal funds until all local procedures have been completed.

The matter has been pending before the New York City Board of Estimate for some time. A hearing was started on April 4; no agreement was reached; and the hearing was continued until April 25. The Board of Estimate set up a special committee to study alternative sites. In view of this action, it may be some time before a final decision on the site is made locally.

6. Legislation pending before the New York State Legislature would effectively bar construction.

On March 25, the New York State Assembly passed by a vote of 135 to 5 a bill to prohibit construction of a sewage treatment plant within 1500 feet of a residential area. This bill is applicable to the proposed site.

On April 9, the New York State Assembly passed unanimously a bill which states that the Comptroller may not expend funds for, and the Commissioner of Health may not approve, any municipal sewage or water pollution treatment facility which does not meet Federal water quality standards and is not designed for 90% BOD removal. This bill is applicable to the proposed North River Water Pollution Control Plant.

In view of the fact that the Assembly has passed two bills directly affecting the project, which are now awaiting action in the Senate, the Secretary of the Interior should certainly not act upon the application for Federal funds before the Senate takes action.

Conclusion

For the foregoing reasons it is respectfully submitted that the Secretary of the Interior should not approve the application for Federal funds for the North River Water Pollution Control Plant.

* * *

(Brochure entitled "Riverbank" was received as an exhibit and will be found in the files of the Federal Water Pollution Control Administration.)

SECRETARY KLEIN: Thank you very much, Mrs. Faust.

We have with us today State Senator Samuel Greenberg. Senator Greenberg?

(No response)

SECRETARY KLEIN: Assemblyman Andrew Stein is represented by his staff assistant. Any remarks?

(No response)

SECRETARY KLEIN: Assemblyman Peter Berle. Is he here?

(No response)

SECRETARY KLEIN: At this point, we will then proceed with the Federal Government's presentation.

Mr. Klashman.

STATEMENT BY
MR. LESTER M. KLASHMAN
CONFEREE AND REGIONAL DIRECTOR
NORTHEAST REGION
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
BOSTON, MASSACHUSETTS

MR. KLASHMAN: Thank you, Mr. Klein.

As a result of the conference held in September of 1965, on the Hudson River and its tributaries, one of the conclusions and recommendations read as follows:

> "The magnitude of the pollution problem caused by discharges from combined sewer overflows is recognized. The Department of Health, Education and Welfare, in cooperation with the States of New Jersey, New York and the Interstate Sanitation Commission, will undertake a review of the problem and develop a program for action for consideration by the Federal Government, the States and the Interstate Sanitation Commission by December 31, 1968.
>
> "The construction of combined sewer systems

in newly developed or redeveloped urban areas shall be prohibited, and existing combined sewers shall be eliminated wherever feasible.

"Programs shall be established for surveillance of existing combined sewer systems and flow regulating structures to convey the maximum practicable amount of combined flows to and through treatment plants."

I should like to now call on Mr. Albert Bromberg, Chief, Operations Branch, Hudson-Delaware Basins Office of the Federal Water Pollution Control Administration, Edison, New Jersey, to report on, first, the work we have done on the combined sewer overflows in the Hudson, and follow this up with a brief statement on some current observations which we made on the Passaic Valley Sewer Authority.

Mr. Bromberg.

STATEMENT BY
MR. ALBERT BROMBERG
CHIEF OF OPERATIONS
HUDSON-DELAWARE BASINS OFFICE
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
EDISON, NEW JERSEY

MR. BROMBERG: Thank you, Mr. Klashman.

Mr. Chairman, Conferees:

My name is Albert Bromberg. I am Chief of Operations at the Hudson-Delaware Basins Office of the Federal Water Pollution Control Administration in Edison, New Jersey.

I would like to read for you most of our report entitled, "An Evaluation of the Significance of Combined Sewer Overflows in the Hudson River Conference Area." However, I would like to enter the entire report for the record.

Mr. Klashman has already indicated the purpose and reason for the preparing and giving of this report.

(The above-mentioned report was read and follows.)

68

CWT 10-11

CLEAN
WATER

AN
EVALUATION
OF THE
SIGNIFICANCE
OF
COMBINED SEWER OVERFLOWS
IN THE
HUDSON RIVER CONFERENCE AREA

JUNE 1969

MARCH 3, 1849

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION • U. S. DEPARTMENT OF THE INTERIOR
HUDSON DELAWARE BASINS OFFICE, EDISON NEW JERSEY

AN EVALUATION OF THE SIGNIFICANCE OF
COMBINED SEWER OVERFLOWS
IN THE
HUDSON RIVER ENFORCEMENT CONFERENCE AREA

U. S. DEPARTMENT OF THE INTERIOR
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
NORTHEAST REGION
HUDSON-DELAWARE BASINS OFFICE

June 1969

Excerpts from the Conference In the Matter of Pollution of the Interstate Waters of the Hudson River and its Tributaries - New York and New Jersey September 28, 29, and 30, 1965.

Item 13 - Conclusions and Recommendations

The magnitude of the pollution problem caused by discharges from combined sewer overflows is recognized. The Department of Health, Education, and Welfare, in cooperation with the States of New Jersey, New York, and the Interstate Sanitation Commission, will undertake a review of the problem and develop a program for action for consideration by the Federal Government, the States and the Interstate Sanitation Commission by December 31, 1968.

The construction of combined sewer systems in newly developed or redeveloped urban areas shall be prohibited, and existing combined sewers shall be eliminated wherever feasible.

Programs shall be established for surveillance of existing combined sewer systems and flow regulating structures to convey the maximum practicable amount of combined flows to and through treatment plants.

Acknowledgement

We wish to thank the States of New York and New Jersey and the Interstate Sanitation Commission for their assistance in gathering data contained in this report.

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SUMMARY AND CONCLUSIONS

1. The waters of the Hudson River Enforcement Conference Area receive the discharge from 74 municipal sewerage systems, 43 of which have collection systems which are totally or partially combined.

2. After implementation of the conference recommendations, combined sewer overflows will contribute approximately 82% of the estimated BOD from municipal discharges, or 61,000,000 pounds per year.

3. Only 2.6%, or 1,600,000 pounds per year of the future combined sewer overflow load will discharge to bodies of water classified for water supply or bathing. Significant quantities of combined sewer overflow in the New York Metropolitan Area discharge immediately adjacent to waters used for bathing (salt water beaches of Staten Island, Coney Island and western Long Island Sound). Bacterial contamination of these recreational areas is of particular concern.

4. Studies are needed in the conference area to determine: a) the quantitative and qualitative characteristics of combined sewer overflow resulting from differing land use areas; and b) the effect of combined sewer overflow on the quality of the receiving water.

5. When the above studies are completed, consideration should be given for remedial action, if indicated, to eliminate combined sewer overflows in areas of highest proposed water use.

INTRODUCTION

Purpose and Scope

Overflows from combined sewer collection systems can create pollution problems. The extent of these problems in the Hudson River Conference area are not known. Studies have been carried out in other areas to evaluate the quality of combined sewer overflows, and to a lesser extent, their effect on the receiving water. The purposes of this study are to review briefly the work already done, assess the problem as it relates to the Hudson River Conference Area and offer suggestions to the conferees regarding a solution to the problem.

The Hudson River Enforcement Conference Area, as shown in Figure 1, is defined as the main stem of the Hudson River from the Federal Lock at Troy, New York to the Battery in New York City, the Upper Bay of New York Harbor, the East River from the Battery to Throgs Neck, the Harlem River, Kill Van Kull and Newark Bay.

Background

Because of the need for power, transportation and water supply, the vast majority of American cities developed along waterways. Even before the installation of public water supplies, diversion of stormwater was of concern in these communities. To this end open ditches and later closed piping systems were developed. All discharges were made directly into the nearest water course.

As public water supplies were developed it became necessary to collect and dispose of wastewater. The most convenient and economic solution was to utilize the existing storm sewers to carry the domestic wastewater. As municipalities became increasingly aware of the need to treat sanitary wastewater, the many short sewers discharging untreated wastewater to the nearest watercourses had to be intercepted and the collection system modified to deliver the wastewater to a single point - the treatment plant. Because it was considered hydraulically and economically impractical to deliver all wastewater and stormwater to a plant, intercepting sewers were constructed which diverted only the dry weather flow to the treatment plant. All flows in excess of this were diverted directly to a watercourse via diversion chambers. Design of the intercepting sewer was usually based on the acceptance of two to three times the average dry weather flow. It was not recognized until later that these diverted flows constituted a significant source of pollution.

Since the overflow is a mixture of sanitary wastewater and stormwater, such diversions result in the discharge of untreated wastes to the stream. Overflows also flush any organic matter which has accumulated in the collection system during dry weather-low flow periods. This phenomenon is one of the many factors responsible for substantial organic loading of streams during storms.

The latest unpublished FWPCA inventory of municipal sewage facilities in the United States lists more than 1300 jurisdictions which are served in whole or part by combined sewers. These systems, serving a total population of 54 million(1) represent 43% of the total sewered population.

There have been few studies conducted which provide information on the quality and quantity of overflow from either combined sewer or separate stormwater systems. These studies differ widely in their approach to the problem and presentation of the pertinent data. The results of several of these studies are summarized in Appendix A.

These limited studies show that the quality of both combined sewer overflows and stormwater runoff is highly variable and dependent on the particular characteristics of an individual drainage or catchment area. Data collected in one area are not generally applicable to other areas of

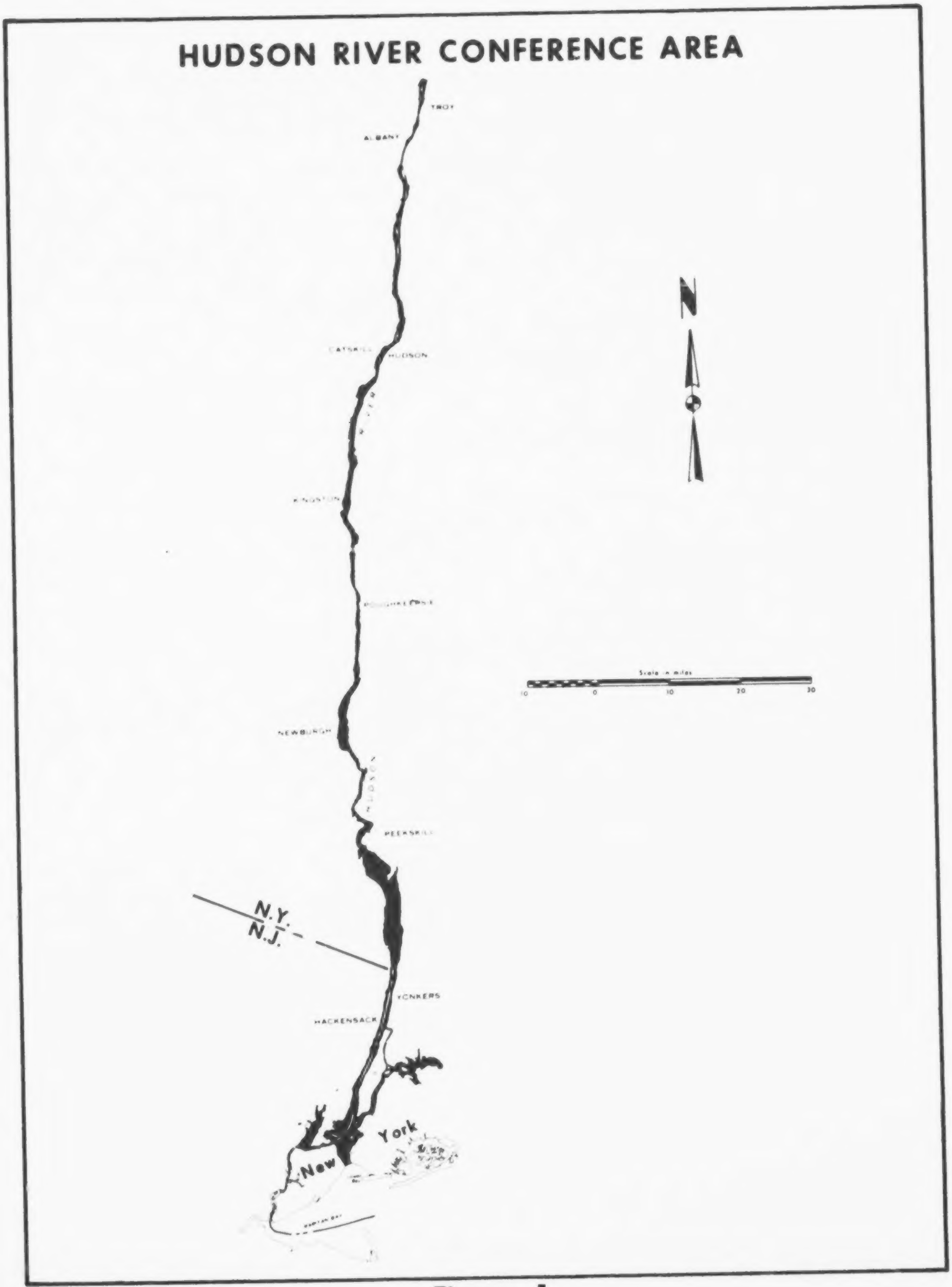
HUDSON RIVER CONFERENCE AREA
TROY
ALBANY
CATSKILL
HUDSON
RIVER
N
KINGSTON
POUGHKEEPSIE
Scale in miles
10
0
10
20
30
NEWBURGH
HUDSON
PEEKSKILL
N.Y.
N.J.
YONKERS
HACKENSACK
New
York
RARITAN BAY

Figure 1

similar, let alone different, characteristics. Combined sewer overflow data have not been collected for systems within the study area. Therefore, an evaluation of the problem necessitates the use of data collected in other areas; namely, that contained in the literature.

METHODOLOGY

The procedure used to evaluate the significance of the pollutional load from combined sewer overflows in the Hudson River Conference Area involved developing estimates of:

1. The pollutional load resulting from combined sewer overflows.
2. The pollutional load from existing municipal systems.
3. The pollutional loads from municipal systems after implementation of the conference recommendations. One of these recommendations states, "All wastes prior to discharge into the waters covered by the conference (a) shall be treated to provide a minimum of 80 percent reduction of biochemical oxygen demand at all times. It is recognized that this will require a design for an average removal of 90 percent of biochemical oxygen demand".

These loadings were compared to assess the significance of combined sewer overflows. Urban runoff via separate collection systems and rural surface runoff were not included in this evaluation since they do not contribute to the combined sewer overflow problem as defined within the context of this report. Although some data are available on the magnitude of industrial waste discharges, they are not considered sufficiently accurate for inclusion in the waste load comparison.

For purposes of evaluating the data, the waters in the conference area were divided into eight sections which conform to those established by the water quality standards. The description of each section and its designated use under the Standards is summarized in Table 1. Figures 2A, 2B and 2C illustrate these sections.

The pollutional load from combined sewer overflows was estimated by using a procedure similar to the analysis suggested by Stanley.(2) This technique involves the computation of the average volume discharged from each combined sewer collection system and a calculation of the yearly average BOD load contained in the discharged volume. Calculation of the volume discharged was based upon the equation:

$$Q_o = CIA + Q_d - Q_p$$

Where:

Q_o = volume of combined sewer overflow per unit time

C = runoff coefficient

I = average intensity of rainfall

A = drainage area served by combined sewers

Q_d = volume of average municipal dry-weather flow per unit time

Q_p = capacity of waste treatment facility

The overflow BOD load was determined by using the equation:

$$L_o = Q_o \times \frac{T}{24} \times B_o$$

Where:

L_o = the BOD_5 load from combined sewer overflows

Q_o = volume of combined sewer overflow per unit time

T = time duration of storms which cause combined sewer overflow

B_o = average concentration of 5-day BOD

A detailed discussion of the computational procedure is presented in Appendix B.

The two most significant variables in this computation are the runoff coefficient, "C", and the BOD concentration, "B_o". Runoff coefficient values for each area were chosen primarily on the basis of population density. Two values of BOD concentration were used: 150 mg/l for the highly urbanized metropolitan area (Sections VI - VIII) and 40 mg/l for the less urbanized areas of the central and Upper Hudson River Valley (Sections I - V).

Present municipal waste discharge loads were obtained from published reports and documents or were computed using the population served, a factor of 0.17 pounds of BOD_5 per capita per day, and a percentage of BOD removal based on the existing waste treatment facilities (see Appendix B). Future municipal loads were computed based on present municipal waste loads treated to 90 percent BOD removal.

Table 1

Sections Established for the Evaluation of Combined Sewer Overflow

Section	Limits of Section	Water Quality Standards	Definition of Best Usage of Waters
I	Troy Locks to New Baltimore	NY - Class C	Fishing and any other usages except for bathing or as a source of water supply for drinking, culinary or food processing purposes.
II	New Baltimore to Esopus	NY - Class A	Source of water supply for drinking, culinary or food processing purposes and any other uses.
III	Esopus to Chelsea	NY - Class A	Source of water supply for drinking culinary or food processing purposes and any other uses.
IV	Chelsea to Bear Mountain Bridge	NY - Class B	Bathing and any other usages, except as a source of water supply for drinking, culinary or food processing purposes.
V	Bear Mountain Bridge to N. J. State Line	NY - Class SB	Bathing and any other usages except shellfishing for market purposes.
VI	NY-NJ State Line to The Narrows, including Upper New York Harbor	NY - Class I	Fishing and any other usages except bathing or shellfishing for market purposes.
		NJ - Class TW-2	Tidal surface waters having limited recreational value and ordinarily not acceptable for bathing but suitable for fish survival although perhaps not suitable for fish propagation. These waters shall not be an odor nuisance and shall not cause damage to pleasure craft having occasion to traverse the waters.
VII	The East River from the Battery to Throgs Neck, including the Harlem River	NY - Class II	All waters not primarily for recreational purposes, shellfish culture or the development of fish life.
VIII	Newark Bay and Kill Van Kull	NY - Class II	All waters not primarily for recreational purposes, shellfish culture or the development of fish life.
		NJ - Class TW-3	Tidal surface waters used primarily for navigation, not recreation. These waters although not expected to be used for fishing shall provide for fish survival. These waters shall not be an odor nuisance and shall not cause damage to pleasure craft traversing them.

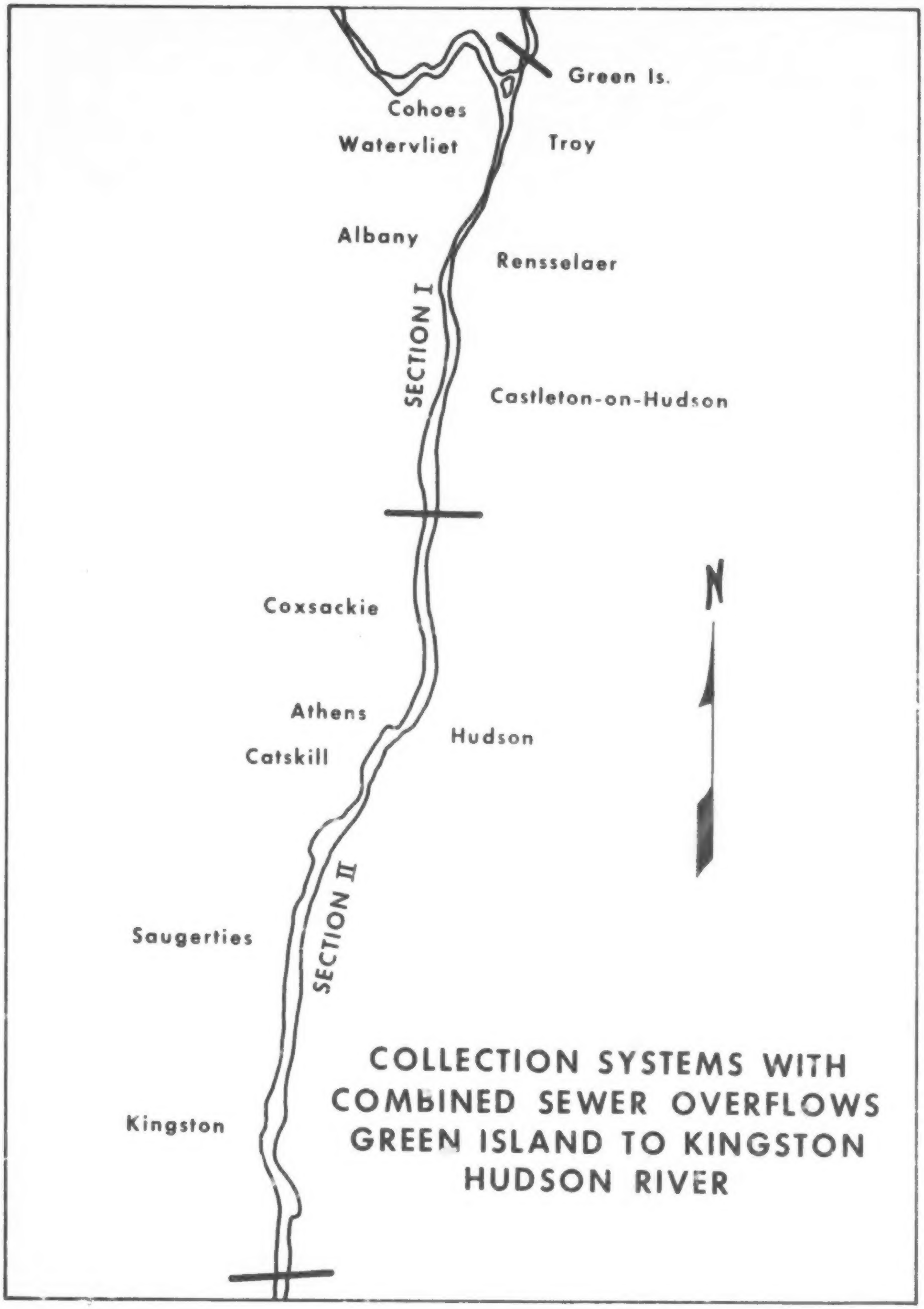
Green Is.
Cohoes
Watervliet
Troy
Albany
Rensselaer
SECTION I
Castleton-on-Hudson
N
Coxsackie
Athens
Hudson
Catskill
SECTION II
Saugerties
Kingston
COLLECTION SYSTEMS WITH
COMBINED SEWER OVERFLOWS
GREEN ISLAND TO KINGSTON
HUDSON RIVER

Figure 2A

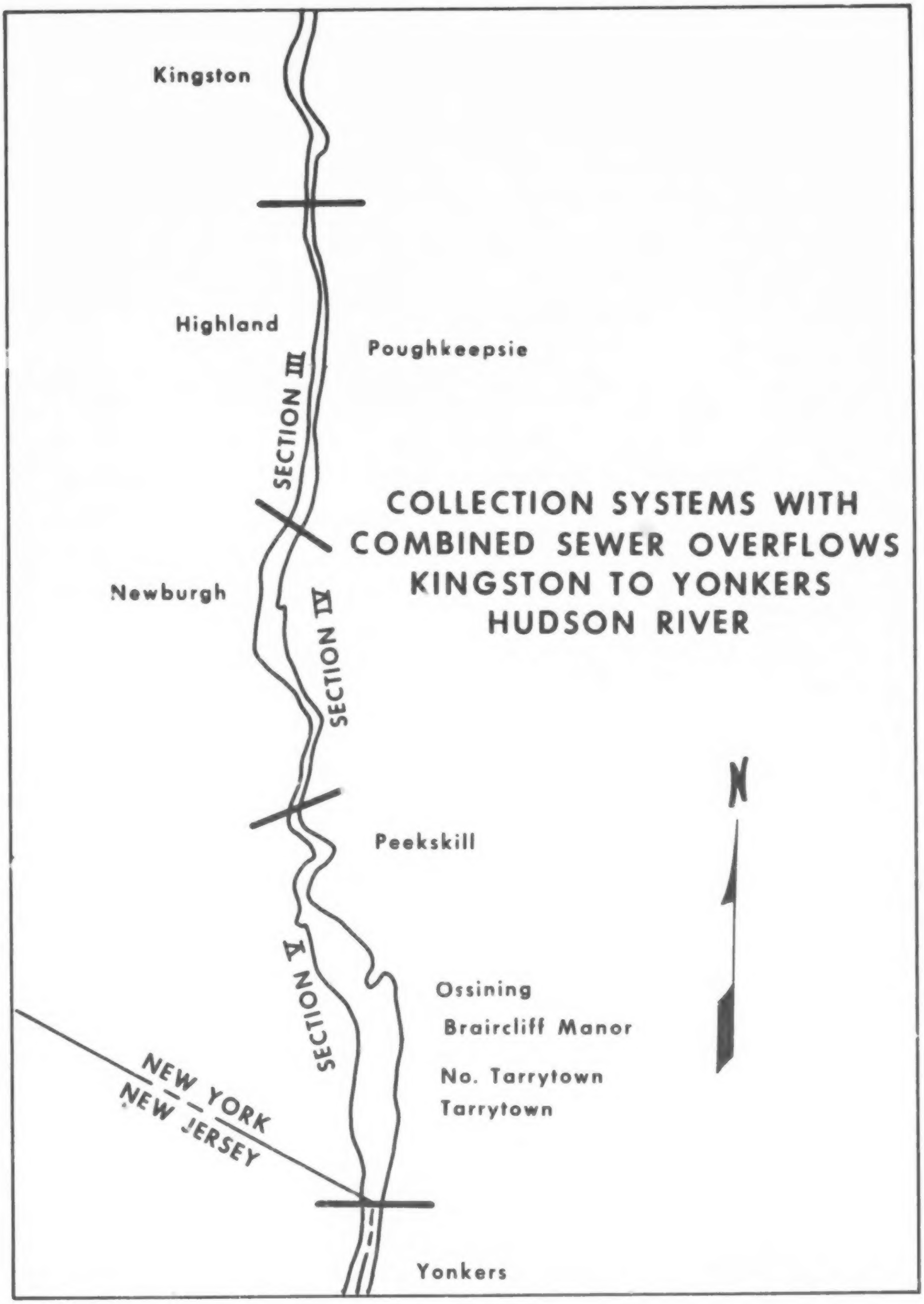
Kingston
Highland
Poughkeepsie
SECTION III
COLLECTION SYSTEMS WITH
COMBINED SEWER OVERFLOWS
KINGSTON TO YONKERS
HUDSON RIVER
Newburgh
SECTION IV
N
Peekskill
SECTION V
Ossining
Braircliff Manor
No. Tarrytown
Tarrytown
NEW YORK
NEW JERSEY
Yonkers

Figure 2B

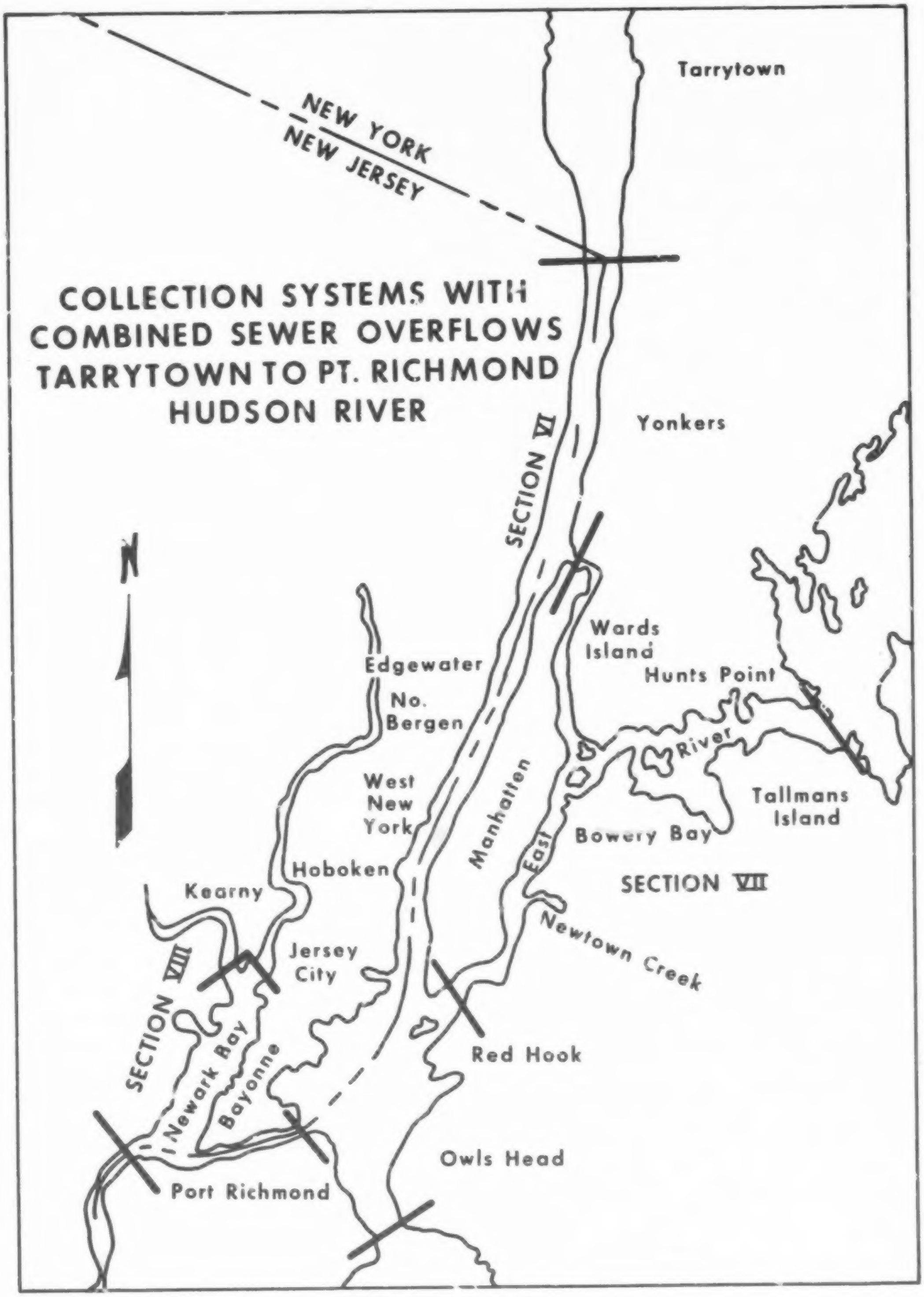
COLLECTION SYSTEMS WITH
COMBINED SEWER OVERFLOWS
TARRYTOWN TO PT. RICHMOND
HUDSON RIVER
Tarrytown
NEW YORK
NEW JERSEY
Yonkers
SECTION VI
N
Wards Island
Hunts Point
Edgewater
No. Bergen
River
West New York
Manhatten
East
Bowery Bay
Tallmans Island
Hoboken
SECTION VII
Kearny
Jersey City
Newtown Creek
SECTION VIII
Newark Bay
Bayonne
Red Hook
Owls Head
Port Richmond

Figure 2C

RESULTS

The significance of the pollutional load from combined sewer overflow can be evaluated by comparing them with municipal waste discharges. However, before making this comparison, several factors should be emphasized concerning the methodology employed, the distribution of the combined sewer overflow load and the validity of the estimated loads versus those which exist in the real environment.

1. The discharges from municipal systems and combined-sewer overflows are unevenly distributed throughout the conference area.

2. The degree of treatment given municipal discharges at present varies from no treatment (raw discharge) to secondary treatment. This significantly affects the magnitude of the municipal discharge load to a given section, but does not materially influence the load from combined sewer overflows.

3. In the calculations for this report, municipalities with combined sewers discharging untreated (raw) waste were not considered to contribute to the present combined sewer overflow load. After implementation of the conference recommendations, these systems would have combined sewer overflows which are then included in the waste load tabulation.

4. The occurrence of overflows from combined sewers is a random phenomenon dependent on rainfall. Computations for the overflow load were based on an average rainfall intensity for an average precipitation year. Actual overflow conditions, however, depend upon the type of storm, its intensity and duration. Short duration, high intensity storms impose significant transient loads upon a collection system and the receiving water. Long duration, low intensity storms, can also produce high loadings which are spread over greater time periods. The initial discharge from a given storm can contain a large portion of the total load because of flushing of solids accumulated in the collection

system during dry weather conditions.(3) (4)

5. It has been reported that as much as 95 percent of the untreated wastewater can be discharged directly to the receiving water via combined sewer overflow during periods of rainfall.(5)

6. It is recognized that untreated municipal discharges and combined sewer outflows contain significant quantities of suspended solids and bacteria. The large variability in the available data precluded a detailed evaluation of these parameters.

Present Combined Sewer Overflow Load

The combined sewer and municipal discharge loads to the conference area are summarized in Table 2. The location of the existing combined sewer collection systems are shown in Figures 2A, 2B and 2C. Within this area, there are 74 municipal collection systems, 43 of which have combined sewers. These combined systems serve an area of approximately 165,000 acres and a population of approximately 7.5 million people. The average annual load of 5-day BOD presently discharged to the waters of the conference area from these combined sewer overflows is estimated at 48 million pounds per year or approximately 11 percent of the 449 million pounds per year originating from existing municipal systems. Nearly all of this combined sewer overflow pollutional load is discharged to Sections VI, VII and VIII, which includes the highly urbanized New York Metropolitan Area. The municipal collection systems discharging to these sections serve a drainage area of 124,000 acres and a population slightly in excess of 7.0 million people.

In Sections I through V, Troy to the New York-New Jersey state lines, the average combined sewer overflow load is 8 percent of the annual 27 million pounds of BOD from municipal discharges. The largest concentration of these loads is in Section [illegible], the Albany-Troy metropolitan area. Combined sewer

TABLE 2

Estimated BOD Load from Municipal Discharges and Combined Sewer Overflows in the Hudson River Conference Area

			Present Waste Load			Future Waste Load		
Section	Number Municipal Sources	Number of Combined Sewer Systems	Municipal Discharge Lbs/yr.	Combined Sewer[1/] Overflow Lbs/yr.	Ratio of Combined Sewer Overflow to Municipal Discharge Percent	Municipal Discharge Lbs/yr.	Combined Sewer[1/] Overflow Lbs/yr.	Ratio of Combined Sewer Overflow to Municipal Discharge Percent
I	17	7	13,955,000	838,000	6	1,789,000	1,760,000	98
II	9	6	2,496,000	353,000	14	350,000	462,000	131
III	5	2	2,352,000	256,000	11	362,000	256,000	71
IV	8	1	3,331,000	--	-	406,000	259,000	64
V	15	7	4,531,000	631,000	14	757,000	631,000	83
Sub-Total	54	23	26,665,000	2,078,000	8	3,664,000	3,368,000	92
VI	10	10	316,909,000	9,608,000	3	37,487,000	18,898,000	50
VII	6	6	94,800,000	32,840,000	35	31,077,000	35,500,000	114
VIII	4	4	10,550,000	3,185,000	30	1,962,000	3,185,000	162
Sub-Total	20	20	422,259,000	45,633,000	11	70,526,000	57,583,000	82
Total	74	43	448,924,000	47,711,000	11	74,190,000	60,951,000	82

1/ Present combined sewer overflow load does not include the load from those combined systems discharging raw, untreated waste.

overflows in this section represent a very small portion of the total municipal load because, based upon the methodology used, four of the eight combined systems discharging without treatment were not considered to contribute to the present overflow load.

The combined sewer overflow load in Sections VI, VII and VIII was estimated to be 11 percent of the total municipal load. Wide discrepancies between the overflow and municipal discharge loads were found among the respective sections. In Section VI, combined sewer overflows contributed only 3 percent of the municipal load. This results from the large raw discharges from Manhattan with the assumption of no associated combined sewer overflow and the municipal discharge from the Passaic Valley Sewerage Commission, which discharges its combined sewer overflow to waters outside the conference area. In contrast, the combined sewer overflow load in Sections VII and VIII was approximately one-third the municipal load. In both these sections, the large metropolitan service areas are characterized by dense urban development with generally high runoff coefficients which increase combined sewer overflows, while there is a significant reduction of the municipal discharge load through treatment.

Future Combined Sewer Overflow Load

After implementation of the conference recommendations, the significance of the pollutional load from combined sewer overflows becomes more apparent. Overflow loads will then be greater than 80 percent of the municipal discharge load, or 61,000,000 versus 74,200,000 pounds of BOD per year. A significant change occurs in Sections I through V, where the load from combined systems will be 92 percent of the municipal load or 3,400,000 versus 3,700,000 pounds of BOD per year. In Sections VI through VIII, combined sewer overflows will be 82 percent of the municipal discharge load, or 57,600,000 versus 70,500,000 pounds of BOD per year.

Although data are not available to include industrial waste discharge loads in the overall comparison with combined sewer overflows, an estimate was made to determine in which sections it will have the most significant effect. Large industrial discharges are known to exist in the Albany-Troy area(Section I) and in the Tarrytown area (Section V). When these industrial waste loads are considered, combined sewer overflow would drop to about 1.7 and 2.2 percent of the present load and 19.5 and 11.5 percent of the future load, respectively, in Sections I and V. The ratio of combined sewer overflow to total discharge load for other sections of the study area do not materially change.

Although this report is concerned primarily with the BOD load contained in combined sewer overflows, there are other pollutional characteristics such as suspended solids and bacteria that add to the total problem.

Suspended Solids

Overflows from combined sewers contain suspended solids normally found in municipal sewage and accumulated solids that have settled in sewers and are flushed out during periods of storm flow. This material constitutes a portion of the BOD contained in combined sewer overflows. It increases the turbidity of the receiving water and may settle to form oxygen demanding benthic deposits. The suspended solids concentrations found in combined sewer overflows from previous studies are summarized in Appendix Table A-1. Applying an average concentration for suspended solids to the estimated volume of combined sewer overflow after implementation of the conference recommendations indicates that approximately 150 million pounds per year will be discharged to the water of the conference area.

Bacteria

Combined sewer overflows have been found to contain densities of coliform organisms in the order of magnitude of that present in raw sewage.(6)

Other studies have indicated that coliform densities increased by a factor of ten in the vicinity of combined sewer overflows, and persisted for periods of several days. It is reasonable to assume that similar conditions would occur in the conference area.

Effect on Water Uses

The conference recommendations specify in part that all wastes in the conference area "...require a design for an average removal of 90 percent of biochemical oxygen demand..." and "...effective disinfection of the effluents as required to protect water uses ...". Combined sewer overflows will continue to introduce to the receiving water constituents that may temporarily violate the standards for the prescribed uses. Overflows contribute organic material which decrease dissolved oxygen, introduce floating, suspended and settleable material which reduce the aesthetic and recreational values of the water and increase bacterial densities which can constitute a danger to public health.

The future combined sewer overflow and municipal discharge loads in relation to the primary water uses as defined by the water quality standards are summarized in Table 3.

Of the 43 combined systems in the conference area, 16 will discharge overflows representing 2 percent of the total load, or 1,600,000 pounds of BOD per year, to waters classified for water supply and bathing. Overflows from 27 combined systems will discharge the remaining 59,000,000 pounds per year to water classified for fishing and navigation. A large portion of this latter discharge, however, affects bathing waters which are immediately adjacent to New York Harbor in the western end of Long Island Sound and the Lower Bay outside the Narrows. Water quality and dye studies conducted by the FWPCA in connection with the Conference on Pollution of Raritan Bay and

TABLE 3

Future Waste Loads as Discharged to Prescribed Water Use Areas

Primary Water Use	Section	Number Municipal Sources	Number Municipal Sources with Combined Systems	Future Waste Load	
				Municipal Discharge Lbs/yr.	Combined Overflow Sewer Lbs/yr.
Water Supply	II, III	14	8	712,000	718,000
Bathing	IV, V	23	8	1,163,000	890,000
Fishing	I, VI	27	17	39,276,000	20,658,000
Navigation	VII,VIII	10	10	33,039,000	38,685,000
Total		74	43	74,190,000	60,951,000

Adjacent Interstate Waters (7) showed that waste discharged to Upper Bay of New York Harbor affected the waters off Coney Island and Staten Island.

Methods of Correction (1) (5) (4)

Several alternatives are available for the elimination and/or treatment of the overflow from combined sewers. For the purpose of discussion, these methods have been divided into the following categories:

1. Separation of sewers
2. Storage and return to the system for treatment
3. Treatment at the point of overflow
4. Miscellaneous

Separation of Sewers

Complete Separation

New construction of waste collection systems favors a separation of stormwater and sanitary waste. One recommendation of the conferees in the Hudson River Enforcement Conference, September 1965, was "the construction of combined sewer systems in newly developed or redeveloped urban areas shall be prohibited". This recommendation has been effected for new construction throughout the conference area. The conferees also recommended elimination of combined sewers wherever feasible.

Complete separation of an existing combined system can be an enormous structural and economic undertaking. In many instances, the task is further complicated by the presence of underground utility lines (gas, electric, telephone, steam, etc.) and subways, and the traffic rerouting associated with open-cut excavations.

The American Public Works Association (1) has estimated that the cost of complete separation of sewers on a national basis will exceed $49 billion. These studies indicate average per acre costs of $13,000 and $19,000 and average per capita costs of $1125 and $700 for the Middle Atlantic and New England areas, respectively. It is reasonable to expect that costs for complete separation in the New York Metropolitan Area would be significantly higher than these estimates. Weighing these factors with the need for funds for other aspects of the pollution control program, complete separation does not appear feasible in the conference area.

Partial Separation

In lieu of complete separation, collection of either street runoff, roof drains, air conditioner flow or foundation drains for diversion to a separate collection system can represent an alternative which would partially alleviate the problem of combined sewer overflows. Partial separation has been calculated to reduce the total volume of runoff by 30-60 percent. The cost can be from 10-50 percent of that required for complete separation.(4)

Storage and Return to the System for Treatment

Methods for the storage of combined sewer overflow include: (1) utilization of excess capacity of the combined sewer, (2) underground storage facilities such as tunnels, (3) surface structures such as holding basins, ponds or lagoons, and (4) inflatable underwater holding tanks. The stored wastewater would be returned to the system for treatment during low flow periods. Each of these methods has merit depending on the physical characteristics of the area, geological structure and proximity to a water body. Among the storm and combined sewer grants and projects that have been awarded by the FWPCA (see Appendix C), Minneapolis, Minn. is investigating in-sewer storage. Chicago, Ill. is constructing a tunnel for storage and several areas are studying inflatable tanks. Surface ponds and lagoons are feasible only where sufficient land is available near the point of overflow, i.e., in rural areas or close proximity to tidal or flood plain flatlands. When studies of these storage concepts are completed, the results will provide guidelines for recommending alternative solutions for other areas.

All methods which provide storage of combined sewer overflow will effect some degree of treatment by the removal of grit and other settleable solids. The need for collection and removal of this accumulated matter will increase operation and maintenance costs.

Treatment at the Point of Overflow

Various types and degrees of treatment may be effected at the point of overflow. Selection of the type of treatment should be dependent on the projected use of the receiving water. Treatment methods which can be used include disinfection, screening, settling or any combination of the three. Disinfection alone can significantly reduce the bacterial concentrations to levels required by the standards but will have little effect upon the solids and BOD concentrations present in the overflow. Chlorination, when applied at the proper dosage, will require effective contact time in terms of residence or flow time in the sewer or holding basin. High solids concentrations tend to reduce the bacteriocidal effects of the disinfectants resulting in the need for larger and costlier dosages. It has been estimated that the chlorine needed to disinfect a mixture of stormwater and sanitary sewage would be 20 percent greater than for sanitary wastes alone.(8)

Screening or microstraining at points of discharge can effectively reduce suspended solids and associated BOD, and the solids can then be returned to the intercepting sewer for transport to the treatment plant. This method is presently being investigated in the Philadelphia, Pa. area (see Appendix C).

The City of New York, with the aid of an FWPCA construction grant, has completed design and initiated construction of its first prototype "Auxiliary Water Pollution Control Plant" (see Appendix C). This study is supported by an FWPCA demonstration grant. The facility is designed to settle and disinfect overflows and return the impounded water and settled solids to the water pollution control plant. This project, located at Spring Creek in Jamaica Bay, also includes a study of the effect on water quality from the effluent.

Miscellaneous Methods

By the addition of polyelectrolytes to combined sewers, their capacity to carry greater volumes is increased. These polymers reduce friction and increase the hydraulic capacity by a factor greater than two. This method is presently being investigated with the aid of an FWPCA grant (see Appendix C).

Most combined sewers in the Hudson River Conference Area were built over 50 years ago. Interstate, state and local water pollution control agencies are concerned that population densities have increased such that the collection systems are overloaded, causing raw sewage to be by-passed to the receiving stream via structures intended to divert stormwater flow only. Many of these diversion structures are presently under-designed or mechanically inoperable without continuous maintenance. Improved diversion chambers with anti-fouling mechanisms or devices automatically controlled in conjunction with flood routing of storm induced flows would result in improved sewer efficiency and a reduction in the number and frequency of combined sewer overflow. An FWPCA grant has been given the City of New York to construct and evaluate a new diversion structure design which is intended to eliminate dry weather discharge and increase interceptor efficiency during storm flows (see Appendix C).

Constant changes in zoning with resultant increases in population densities, and change in land use patterns and surface characteristics can impose conditions for which sewers were not designed. Through proper regional planning it may be possible to control land use and maximize the capabilities of a collection system to reduce combined sewer overflows.

Infiltration is a major problem in many collection systems, both old and new, and the increased flow often results in overflows even without rainfall. Rigid specifications should be adopted and enforced regarding methods of joining pipe sections, including more stringent construction inspection and testing. The evaluation of infiltration problems in old collection systems should be encouraged together with the establishment of logical long-range programs to correct dificiencies and replace or repair sewer lines as required. For existing sewers, recent innovations for television inspection and in-place sealing have become available.

Discussion

A conservative approach was taken in developing the data discussed in this report. For example, values for the runoff coefficient "C" were reduced because an annual average rainfall intensity was utilized in computing combined sewer overflow volumes. The use of a lower runoff coefficient was substantiated by comparison with runoff coefficients computed from actual rainfall-runoff data collected by the Federal Water Pollution Control Administration, Delaware Estuary Comprehensive Study. Lower values of BOD in combined sewer overflows were applied to the less urbanized communities as opposed to the large, densely populated Metropolitan areas.

Many factors complicate the solution of the combined sewer overflow problem. The foremost of these is the necessity of channeling presently available funds into areas of more immediate need, namely the construction of municipal waste treatment facilities. Also, the construction of combined sewer overflow treatment facilities will not completely eliminate the problem because, at this time, it appears that technical and economic problems preclude the design of a system which provides complete treatment of overflows from all storms. Systems can be designed, however, to provide minimum treatment for most overflows.

Another factor affecting the solution to the problem is the existence of combined sewer collection systems which have been designed and constructed many years ago. Hydraulic loads to intercepting sewers and diversion structures in these systems often exceed design capacity. This results in more frequent overflows during storm periods and in some cases the diversion of raw sewage during dry weather periods. Many of the existing diversion structures are mechanical devices which foul readily and function inefficiently. Before a massive construction program of combined sewer overflow treatment facilities is initiated, a program of maintenance and/or modernization of the diversion structures should be undertaken.

There is a lack of sufficient quantitative information on the characteristics of combined sewer overflows, particularly in the Hudson River Conference Area. It is known that land use and developmental characteristics of a given community or municipality greatly affect the quality and quantity of combined sewer overflows. Most previous studies have been conducted in larger cities which have high runoff characteristics, high population densities and areas of commercial and/or industrial activities. Very few studies have been conducted in less urbanized, lower population density areas such as those located in the middle Hudson River Valley. Few studies have been conducted which show the effect of combined sewer overflows on the receiving water body. Studies such as those presently being carried out by the City of New York in Jamaica Bay for the "Spring Creek Auxilliary Water Pollution Control Program" will add significantly to knowledge regarding these effects. Additional comprehensive studies should be conducted in other water bodies (i.e. fresh water and salt water) classified for different water uses (i.e. water supply, bathing, fishing and shellfishing) which receive combined sewer overflows. The effect of various land use characteristics should be integrated into such a program wherever possible.

The method to treat combined sewer overflow is dependent on many factors such as economics, a feasible treatment process and the availability of space within close proximity of the overflow point. In the rural middle and Upper Hudson Valley, land might be available for the construction of treatment facilities at the point of overflow. In the urbanized New York Metropolitan area surrounding New York Harbor, where space is at a premium and land costs are high, a combination of methods such as increased utilization of in-sewer storage through automated overflow regulators, inflatable storage in the receiving water with return to the system for treatment or some method of treatment at the point of overflow might prove feasible. The City of New York is awaiting an evaluation of its Spring Creek-Jamaica Bay prototype installation before recommending a course of action for future auxilliary projects.

To receive the maximum benefit from a combined sewer overflow abatement program, remedial action should first be undertaken in high priority water use areas. These include Sections II, III, IV, and V in the Hudson River and the Sections in the New York Metropolitan Area which affect the recreational waters immediately adjacent to the conference area. The health hazard resulting from the discharge of bacteria in the overflows may be of prime concern with regard to the established water uses. The program may then be extended to areas of less critical water uses, or to sections where the water quality standards may be upgraded in the future.

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APPENDIX A

PREVIOUS STUDIES

Studies of Combined Sewer Systems

East Bay Metropolitan Utility District, Oakland, Calif. (5) (9)

Of the six cities connected to the wastewater treatment plant, only Oakland retains combined sewers which generate overflows through diversion structures. These structures permit stormwater-diluted wastewater to pass through outfalls to San Francisco Bay. In spite of the essentially separate collection system, wastewater flows in the interceptors increase substantially during storms. Because the treatment plant will not accommodate·the increased flow, it is necessary to bypass the plant during storms.

Extensive sampling of the various features of the system indicated that substantial pollutional loads as measured by organic and inorganic standards are carried by the combined sewer overflows. In addition, the effect of overflows on the receiving streams was also examined. The effect was clearly shown by the increase in BOD concentration from an average of 5.8 mg/l above to 25 mg/l below the overflow discharge and the increase in coliform levels from an average of about 2,000/100 ml to 40,500/100 ml.

Buffalo, N. Y. (5) (10)

In Buffalo, a number of methods were investigated with the objective of reducing pollution from combined sewer overflows. A special term "Ch", or characteristic factor, was introduced as a method of compensating for variables in population density and runoff coefficient. The results of the study indicated that it was not possible to calculate a favorable balancing of diversion factors for an actual combined sewer system.

Detroit, Michigan (11) (12)

This investigation involved a sampling program of the outfalls of combined sewers in the Detroit area. The Detroit-Connors Creek combined sewer system, located in the northwest portion of the city, serves about 25 percent of the city population in an area of approximately 22,000 acres. Total coliform concentrations were found to approach those in raw wastewater.

Philadelphia, Pennsylvania (3)

An investigation was conducted to evaluate the significance of combined sewer overflows in the Delaware Estuary at Philadelphia. An automatic instrumentation system was developed to record combined-sewer overflows and determine the quality of these overflows at six outfalls in Philadelphia. Data from two of the outfalls were generated continuously for a period of two years. A network of 21 rain gages was installed at strategic locations in the city.

It was found that on the average, combined-sewer overflows contributed approximately 6 percent of the total carbonaceous oxygen demanding material to the Delaware Estuary. Since the investigation was conducted during an extended drought period, this was considered a conservative estimate.

Illinois River System (5) (13)

A 9-month study was carried out in Chicago, Illinois in an area of about 8.6 square miles served by the Roscoe Street sewer. During the study period 31 storms occurred. The total BOD load discharged to the stream was computed at 278,000 lbs. These figures were used to estimate the total BOD overflow load to the canal system. Flow data from three major plants were used for the computation and on this basis the average total BOD overflow load was calculated to be 46,900 lbs/day.

Detroit River (6)

The Detroit River was studied to determine the effects of combined sewer overflows on stream coliform densities. The effects of the discharges from combined sewers were evident for several days after the actual overflows had ceased. The duration of adverse effects on the river was directly proportional to the intensity of the storm. After a moderate rain, the relative increase in coliform density was greater than a thousandfold within a few miles of the discharge points. Patterns of fecal coliform and fecal streptococcus densities were similar to those of the total coliforms, but to a lower order of magnitude. Total coliform densities exceeded 100,000/100 ml in a large volume of the receiving water after a moderate rain, and exceeded 1,000,000/100 ml after a severe storm.

Jamaica Bay

In 1968, the Federal Water Pollution Control Administration, with the cooperation of the City of New York, conducted a bacteriological survey in Jamaica Bay to evaluate the significance of seasonal versus year round chlorination of treatment plant effluents. Results indicated a reduction in the steady state coliform levels to approximately 3,000/100 ml near the point of discharge after the start of chlorination. During periods of combined sewer overflow, coliform levels increased by at least a factor of ten and persisted for a period of approximately three days.

Summary

As a result of these studies, there is little doubt that combined sewer overflows are important sources of water pollution.

Table A-1 is a compilation of data gathered from these investigations regarding the quality of overflow discharges.

Studies of Separate Stormwater Systems

Cincinnati, Ohio (14)

This study, conducted over a one-year period (July 1962 - September 1963), investigated the pollutional characteristics of urban land runoff. The study covered a 27 acre residential and light industrial section of the city served by separate sewers. The study area consisted primarily of single family homes, apartments and commercial buildings. The population density was nine persons per acre. The results indicated that the BOD from surface runoff is about equal to that expected from the effluent of a secondary sewage treatment plant, but suspended solids concentrations are equivalent to those found in raw domestic sewage.

Detroit, Michigan (11) (12)

A study was conducted which included the sampling of the Ann Arbor - Allen Creek stormwater drain serving approximately 3,800 acres. This area included residential, commercial and light industrial sections as well as some undeveloped area. Results indicated that:

1. BOD in separate stormwater discharges was generally about one-fifth of that observed in combined sewer overflows.

2. Total coliform densities were approximately one-tenth of those in combined sewer overflows.

Washington, D. C. (5)

A study was conducted to obtain data on street runoff. Limited sampling at catch basins during storm periods indicated that the average BOD concentrations in the stormwater runoff from this urbanized area was 126 mg/l. The average concentration of suspended solids was found to be 2,100 mg/l.

East Bay Metropolitan Utility District, Oakland, Calif. (5) (9)

Sampling during storm periods at 21 sampling stations located throughout the East Bay Metropolitan Area indicate that these flows contained substantial pollutional loads. The results, as reported, showed that BOD concentrations ranged from 3 to over 700 mg/l with an average concentration of 87 mg/l. Coliform densities (MPN/100 ml) ranged from 4 to 70,000 and averaged 11,800. The average concentration of suspended solids was 613 mg/l with a range of 16 to 4,400 mg/l.

Los Angeles Flood Control District (5)

A study, by the Water Conservation Division of the Los Angeles Flood Control District, determined the quality of stormwater for the purpose of investigating the feasibility of replenishment of groundwater supplies. Average BOD concentrations during the storm seasons of 1932-34, 1957-58 and 1962-63 were 6.9 mg/l, 8.2 mg/l and 16.1 mg/l, respectively. The results also indicated that in the early period of storms BOD concentrations were about 70 mg/l and decreased to around 10-20 mg/l as the storm continued.

Table A-2 is a summary of the results of studies conducted on stormwater runoff collection systems.

TABLE A-1

Quality Characteristics of Combined Sewer Overflows for Various Studies

Combined-Sewer Overflow Study Areas	Average Total Coliform per 100 ml	Average Susp. Solids (mg/1)	Average 5-Day BOD (mg/1
Oakland, California			
East Bay Met. Utility Dist.			
Interceptor Flows	293,000	128	180
Plant Bypassed Flows	1,408,000	253	133
Detroit Michigan			
Corner Street Sewer System	37,000,000	274	153
Buffalo, New York			
Bird Ave. Sewer	--	544	100
Baily Ave. Sewer	--	436	121
Philadelphia, Pa.			
WIN - H St. & Ramona	--	330	145
SUS - Wildey & Susquehanna Ave.	--	484	152
BING - Garland & Bingham St.	--	373	192
CHRIS - Water & Christian St.	--	573	243

TABLE A-2

Quality Characteristics of Stormwater Runoff Collection Systems

Stormwater Collection System Study Areas	Average Total Coliform MPN/100 ml	Average Suspended Solids (mg/l)	Average 5-Day BOD (mg/l)
Cincinnati, Ohio	--	208	21
Ann Arbor - Allen Creek (Detroit, Michigan)	--	2,080	28
Washington, D.C.	--	2,100	126
East Bay Met. Utility Dist.	11,800	613	87
Los Angeles Flood Control Dist. (1962-63)	--	2,909	16

APPENDIX B

DISCUSSION OF METHODOLOGY

APPENDIX B

Discussion of Methodology

A summary of data and results of discharge load computations for all municipal waste systems which significantly affect the waters of the Hudson River Conference Area is presented in Table B-1. Discharge loads were computed on the basis of present conditions and estimates prepared which represent conditions after implementation of the conference recommendations. Assumptions used are described as footnotes in the Table.

The data used in computing the combined sewer overflow loads and the results of these computations are summarized in Table B-2. The basic equations employed were:

$$Q_o = CIA + Q_d - Q_p \quad 1)$$

$$L_o = Q_o \times \frac{T}{24} \times B_o \quad 2)$$

The methodology used in developing the entries in Table B-2 follow.

Column (1) - Combined Sewer Systems, (2) - Estimated Population Served, (3) - Area Served, (4) - Population Density, (5) - Treatment Plant Capacity, (6) - Average Dry Weather Flow

All collection systems served by combined sewers are listed, including raw discharges. Data were obtained from FWPCA Municipal Waste Inventory, 1968,(22) New York State Existing Polluter Printout,(27) a New York City Publication,(20) FWPCA Report WP-20-11(15) and correspondence with the States of New York and New Jersey and the Interstate Sanitation Commission. For certain selected communities with large tracts of undeveloped marginal lands, the area served was derived by measurement from USGS quadrangle topographic maps. When actual data were not available, dry weather flow was computed on the basis of the population served and a per capita flow of 100 gallons per day.

Column (7) - Average Runoff Coefficient

The runoff coefficient for a given area depends upon both natural topography and patterns of land development. Runoff coefficients used for this report are based upon those published by Chow,(19) which were originally formulated as the basis for (1) calculating runoff for storms of high intensity and (2) calculating runoff at peak flow conditions.

However, the coefficient of runoff to be used to calculate average flow conditions is less than the coefficient for determining peak runoff during any storm. For the purposes of this investigation, the runoff coefficients as published in Chow(19) were reduced by one-third. This reduction was substantiated by comparing computed runoff coefficients from prototype data collected by the FWPCA, Delaware Estuary Comprehensive Study, with the values listed in Chow. The computed values were found to be approximately one-third less than those published.

Exceptions to the above rationale were made for Manhattan and portions of the Bronx, Queens and Brooklyn. These areas, which are unique in terms of population density and land use characteristics, are served by the Wards Island, Newtown Creek, Red Hook and Manhattan collection systems. The runoff coefficients for these areas were not reduced as described above. The coefficients used were the mean of the ranges given by Chow(19) for areas characterized as (1) Business: Downtown Areas and (2) Residential: Apartment Dwellings.

Column (8) - Average Storm Intensity

Rainfall data for the study area were obtained from the Environmental Science Service Administration, Weather Bureau for stations located at Albany-City, Poughkeepsie-1 N and New York-Central Park. Data for 1961, an average precipitation year, were used in the computations.

All rainfall falling on a given area does not produce combined sewer overflow. To determine the minimum intensity which would produce overflow in each of the systems, the following expression was used:

$$Q_o = Q_s + Q_d - Q_p \qquad 3)$$

Q_o = combined sewer overflow

Q_s = stormwater flow

Q_d = average dry weather flow

Q_p = treatment plant capacity

At the time just before overflow begins, $Q_o = 0$ and $Q_s = CIA$. Substituting in equation 3) and solving for I,

$$I_{Min} = \frac{Q_p - Q_d}{CA} \qquad 4)$$

Example calculation - Bayonne, N. J.

A = 1260 acres

Q_p = 20 MGD

Q_d = 8 MGD

C = 40%

$$I_{Min} = \frac{20.0 \text{ MGD} - 8.0 \text{ MGD}}{.40 \text{ X } 1260 \text{ acres X } .645 \text{ MGD/CFS}}$$

$$I_{Min} = 0.035 \text{ in/hr}$$

Of the combined systems in the conference area, only five could accept rainfall intensities above the minimum (.01 in/hr) recorded by the Weather Bureau without causing an overflow. These five systems were the Owls Head and Newtown Creek sections of New York City, and Jersey City, Bayonne and Kearny, N. J.

The average intensity of rainfall for each collection system was computed by using the weighted average of all storms with intensities above the minimum required to produce overflow. The general equation used was:

$$I_{avg.} = \frac{I_i \text{ X } n_i}{n_i} \qquad 5)$$

where:

$I_{avg.}$ = average rainfall intensity (in/hr)

I_i = unit storm intensity (in/hr)

n_i = number of occurrences of unit storm intensity

Example calculation - Bayonne, N. J.

$$I_{avg.} = \frac{6.322}{83} = 0.076 \text{ in/hr}$$

Column (9) - Combined Sewer Overflow

The combined sewer overflow volume was calculated by using the data from columns (3), (5), (6), (7) and (8) and equation (1),

$$Q_o = CIA + Q_d - Q_p$$

For the systems which are presently discharging raw wastes, it was assumed that the future treatment plant capacity would be equal to the average dry weather flow (Column (6)). Therefore, the future overflow volume for these systems would be equal to Q_o = CIA.

Example calculation - Bayonne, N. J.

C = 40%

I = 0.076 in/hr

A = 1260 acres

Q_d = 8.0 MGD

Q_p = 20.0 MGD

Q_o = 0.40 x 0.076 in/hr x 1260 acres x 0.645 MGD/CFS
+ 8.0 MGD - 20.0 MGD

Q_o = 12.7 MGD

Columns (10) and (11) - Combined Sewer BOD Load, Present and Future

The estimated BOD load was computed using equation (2),

$$L_o = Q_o \times \frac{T}{24} \times B_o$$

Two levels of BOD concentration were applied to combined sewer overflows in the study area. A concentration of 150 mg/l was applied to overflows in the New York Metropolitan area. This is approximately the mean of the data reported in the literature, with particular emphasis on data collected in large urban areas similar to those which exist in metropolitan New York, (i.e., Philadelphia, Detroit, etc.). A concentration of 40 mg/l was used for the less urbanized areas, namely those systems in Sections I through V, and for Edgewater, N. J., Kearny, N. J. and Port Richmond, Staten Island, N. Y. This value was the average of data obtained by computing the resultant BOD concentration for a mixture of raw sewage and storm-water runoff for several communities in the study area. As stated previously, collection systems presently discharging untreated wastes were not credited with combined sewer overflow loads, and were omitted from the listing of present loads, Column (10). After construction of treatment facilities, these systems would have overflow loads, and were therefore included in the future load tabulation, Column (11).

Example calculation - Bayonne, N. J.

Q_o = 12.7 MGD

T = 513 hrs/yr

B_o = 150 mg/l

$$L_o = 12.7 \text{ MGD} \times \frac{513 \text{ hrs/yr}}{24 \text{ hrs/day}} \times 150 \text{ mg/l} \times 8.35 \frac{\text{lbs/MG}}{\text{mg/l}}$$

$$L_o = 340{,}000 \text{ lbs/yr}$$

TABLE B-1

Estimated Load from Municipal Discharges Hudson River Conference Area

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
						Municipal Discharge BOD Load		
Municipal Sewerage System	Type of System a/	Estimated Population Served	Type of Treatment	Treatment Plant Capacity (MGD)	Average Dry-Weather Flow (MGD) b/	Present (Lbs/day) c/	Present (Lbs/yr)	Future (Lbs/yr) d/
			Section I - Troy to New Baltimore					
Pleasantdale	S	840	None	--	0.08	143	52,000	5,000
Troy	C	67,673	None	--	6.80	11,500	4,200,000	420,000
East Greenbush	S	5,200	Primary	.75	0.52	575	210,000	32,000
Castleton-On-Hudson	C	1,752	None	--	0.18	298	110,000	11,000
Rensselaer	C	10,506	None	--	1.05	1,786.02	652,000	65,000
Latham S. D. Colonie	S	7,000	Primary	.77	0.70	774	283,000	43,000
Delmar & Elsmere S. D. Bethlehem	S	11,900	Primary	1.60	1.20	1,320	480,000	74,000
Maplewood S. D. Colonie	S	2,500	Primary	2.50	0.25	276	101,000	16,000
Albany-Schenectady S. D.	S	9,000	Primary	1.50	0.90	995	363,000	56,000
Cohoes	C	19,950	None	--	2.00	3,392	1,238,000	124,000
Green Island	B	3,533	None	--	0.35	601	219,000	22,000
Watervliet	C	14,000	Primary	2.00	1.40	1,552	566,000	87,000
Menands	S	2,304	None		0.24	392	143,000	14,000
Albany	C	126,000	Primary	30.00	12.60	13,923	5,082,000	782,000
West Albany	S	600	None	--	0.06	102	37,000	4,000
Colonie Latham	S	3,000	Primary	.77	0.30	332	121,000	19,000
Ravena	S	2,424	Primary	.21	0.24	268	98,000	15,000
Sub-Total		288,182					13,955,000	1,789,000

TABLE B-1 (cont'd.)

(1) Municipal Sewerage System	(2) Type of System [a/]	(3) Estimated Population Served	(4) Type of Treatment	(5) Treatment Plant Capacity (MGD)	(6) Average [b/] Dry-Weather Flow (MGD)	(7) Municipal Discharge BOD Load Present [c/] (Lbs/day)	(8) Municipal Discharge BOD Load Present (Lbs/yr)	(9) Municipal Discharge BOD Load Future [d/] (Lbs/yr)
Section II - New Baltimore to Esopus								
Greenport S. D.	S	1,500	Primary	0.15	0.15	166	61,000	9,000
Hudson	C	11,270	Primary	3.70	1.10	1,246	455,000	70,000
Coxsackie	C	2,849	None	--	0.30	484	177,000	18,000
Athens	C	1,754	None	--	0.20	298	109,000	11,000
Catskill	C	5,825	None	--	0.60	990	361,000	36,000
Whittier S. D.	S	250	Primary	0.10	.02	28	10,000	2,000
Saugerties	B	3,250	Primary	0.80	0.50	359	131,000	20,000
Kingston	C	28,817	Primary	5.00	3.50	3,184	1,162,000	179,000
Tivoli	S	750	Primary	0.10	.08	83	30,000	5,000
Sub-Total		56,265					2,496,000	350,000
Section III - Esopus to Chelsea								
Highland S. D. Lloyd	C	5,000	Primary	0.50	0.20	553	202,000	31,000
Millbrook	S	1,823	Primary	0.15	0.18	201	73,000	11,000
Poughkeepsie	B	40,000	Primary	10.00	4.00	4,420	1,613,000	248,000
Arlington S. D. Poughkeepsie	S	8,000	Primary	1.00	0.80	884	323,000	50,000
Wappinger Falls	S	3,500	Primary	.75	0.35	387	141,000	22,000
Sub-Total		58,323					2,352,000	362,000

TABLE B-1 (cont'd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
						Municipal Discharge BOD Load		
Municipal Sewerage System	Type of System a/	Estimated Population Served	Type of Treatment	Treatment Plant Capacity (MGD)	Average b/ Dry-Weather Flow (MGD)	Present c/ (Lbs/day)	Present (Lbs/yr)	Future d/ (Lbs/yr)
			Section IV - Chelsea to Bear Mountain Bridge					
Beacon	S	17,500	Primary	4.10	1.75	1,933	706,000	109,000
Newburgh	C	30,000	None	--	3.00	5,100	1,862,000	186,000
Cornwall	S	2,000	Primary	.240	0.20	221	81,000	12,000
New Windsor	S	6,250	Primary	.625	.625	691	252,000	39,000
Cornwall S. D. #1	S	2,500	Primary	.240	0.25	276	101,000	16,000
Highland Falls - North	S	4,469	Primary	1.00	.45	494	180,000	28,000
Cold Springs	S	2,083	None	--	0.20	354	129,000	13,000
Highland Falls - South	S	500	Primary	.1	.05	55	20,000	3,000
Sub-Total		65,302					3,331,000	406,000
			Section V - Bear Mountain Bridge to New Jersey State Line					
West Haverstraw	S	6,500	Primary	.30	0.65	718	262,000	40,000
Haverstraw	S	6,000	Primary	1.00	0.60	663	242,000	37,000
Upper Nyack	S	900	Primary	0.11	0.09	99	36,000	6,000
Nyack	S	5,300	Primary	.80	0.53	586	214,000	33,000
South Nyack	S	3,200	Primary	.30	0.32	354	129,000	20,000
Orangetown S. D. #2	S	34,000	Primary	8.50	5.00	3,757	1,371,000	211,000
Peekskill	B	18,000	Intermediate	3.00	1.80	910	335,000	112,000
Croton-On-Hudson	S	3,920	Primary	0.75	0.40	433	158,000	24,000
Ossining-Water St. STP	B	14,000	Primary	2.00	1.40	1,547	565,000	87,000
Briarcliff Manor #1	B	125	Primary	.044	0.01	14	5,000	1,000
N. Tarrytown	B	9,100	Primary	1.70	0.90	1,006	367,000	56,000
Tarrytown	B	10,000	Primary	1.50	1.00	1,105	403,000	62,000
Irvington	S	4,000	Primary	1.00	0.40	442	161,000	25,000
Ossining-Liberty St. STP	B	2,000	Primary	1.40	.20	221	81,000	12,000
Briarcliff Manor #2	B	5,000	Primary	0.45	0.50	553	202,000	31,000
Sub-Total		122,045					4,531,000	757,000

TABLE B-1 (cont'd.)

(1) Municipal Sewerage System	(2) Type of System a/	(3) Estimated Population Served	(4) Type of Treatment	(5) Treatment Plant Capacity (MGD)	(6) Average Dry-Weather Flow (MGD) b/	(7) Municipal Discharge BOD Load Present c/ (Lbs/day)	(8) Present (Lbs/yr)	(9) d/ Future (Lbs/yr)
			Section VI - New Jersey State Line to The Narrows					
Edgewater	C	11,700	Primary	4.40	2.30	1,700	620,000	73,000
Hoboken	C	97,000	Primary	20.80	15.30	10,700	3,900,000	602,000
West New York	C	52,600	Primary	10.00	5.50	5,830	2,130,000	326,000
Jersey City-East Side	C	160,000	Primary	46.00	29.10	17,700	6,460,000	993,000
North Bergen	C	15,000	Primary	3.30	2.00	1,650	604,000	93,000
Passaic Valley Sewerage Commission	B	1,200,000	Primary	240	242.00	563,000	205,495,000	22,800,000
Yonkers	B	500,000	Primary	63.00	62.00	55,200	20,200,000	3,100,000
Manhattan	C	811,400	None	--	113.50	125,000	45,600,000	4,560,000
Red Hook	C	235,000	None	--	32.20	35,400	12,900,000	1,290,000
Owls Head	C	800,000	--	160.00	92.00	52,000	19,000,000	3,650,000
Sub-Total		3,882,700					316,909,000	37,487,000
			Section VII - East River					
Wards Island	C	1,250,000	--	220.00	210.00	57,000	20,800,000	9,617,000
Hunts Point	C	703,000	--	150.00	120.00	33,500	12,200,000	4,526,000
Bowery Bay	C	637,000	--	120.00	100.00	52,000	18,950,000	6,351,000
Newtown Creek	C	763,600	--	310.00	110.00	51,000	18,600,000	6,205,000
Tallman's Island	C	390,000	--	60.00	42.00	21,500	7,850,000	2,738,000
Manhattan	C	291,400	None	--	41.00	45,000	16,400,000	1,640,000
Sub-Total		4,035,000					94,800,000	31,077,000
			Section VIII Newark Bay and Kill Van Kull					
Bayonne	C	74,000	Primary	20.00	8.00	8,200	2,990,000	459,000
Jersey City-West Side	C	110,000	Primary	36.00	15.70	12,200	4,450,000	683,000
Kearny	C	32,100	Primary	4.00	3.20	3,540	1,290,000	199,000
Port Richmond	B	131,000		10.00	10.00	5,000	1,825,000	621,000
Sub-Total		347,100					10,555,000	1,962,000
Total		8,854,917					448,929,000	74,190,000

TABLE B-1 (cont'd.)

a/ S = Separate sewer collection system
C = Combined sewer collection system
B = Separate and combined sewer collection system

b/ Actual flow if available. Where not available, computed using the estimated population served and a per capita flow of 100 gallons per day.

c/ Where plant data were not available, waste load was computed based upon the population served and a factor of 0.17 pounds of BOD per capita per day. Treatment plants were credited with 35 percent BOD removal for primary treatment and 70 percent removal for intermediate treatment.

d/ Calculated on the assumption that implementation of the conference recommendations require all wastes receive an average of 90 percent removal of BOD.

TABLE B-2

Estimated Load from Combined Sewer Overflows Hudson River Conference Area

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
									Combined Sewer BOD Load	
Combined Sewer Systems	Estimated Population Served	Area Served (acres)	Population Density (Persons/acre)	Treatment Plant Capacity (MGD)	Average Dry-Weather Flow (MGD)	Runoff Coefficient (Percent)	Average Storm Intensity (in/hr)	Combined Sewer Overflow (MGD)	Present (Lbs/yr)	Future (Lbs/yr)
Section I - Troy to New Baltimore										
Albany	126,000	8,544	14.7	30.00	12.60	35	0.056	90.60	768,000	768,000
Watervliet	14,000	705	19.9	2.00	1.40	35	0.056	8.30	70,000	70,000
Castleton-On-Hudson	1,752	384	4.6	--	0.18	25	0.056	3.50	--	29,000
Rensselaer	10,506	1,790	5.9	--	1.05	25	0.056	16.20	--	137,000
Troy	67,673	6,450	10.5	--	6.80	35	0.056	81.60	--	691,000
Green Island	3,533	510	6.9	--	0.35	25	0.056	4.60	--	39,000
Cohoes	19,950	2,430	8.2	--	2.00	35	0.056	30.70	--	260,000
Sub-Total	243,414	20,813							838,000	1,994,000
Section II - New Baltimore to Esopus										
Hudson	11,200	1,000	11.2	3.70	1.10	30	0.056	8.3	70,000	70,000
Kingston	28,817	2,540	11.3	5.00	3.50	25	0.048	18.2	189,000	189,000
Saugerties	3,250	1,000	3.2	0.80	0.50	30	0.048	9.0	94,000	94,000
Catskill	5,825	500	11.6	--	0.60	30	0.056	5.4	--	46,000
Athens	1,754	333	5.3	--	0.20	20	0.056	2.4	--	20,000
Coxsackie	2,849	711	4.0	--	0.30	20	0.056	5.1	--	43,000
Sub-Total	53,695	6,084							353,000	462,000
Section III - Esopus to Chelsea										
Highland	5,000	792	6.3	0.50	0.20	20	0.048	4.6	48,000	48,000
Poughkeepsie	40,000	2,400	16.7	10.00	4.00	35	0.048	20.0	208,000	208,000
Sub-Total	45,000	3,192							256,000	256,000

TABLE B-2 (cont'd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
									Combined Sewer BOD Load	
Combined Sewer Systems	Estimated Population Served	Area Served (acres)	Population Density (Persons/acre)	Treatment Plant Capacity (MGD)	Average Dry-Weather Flow (MGD)	Runoff Coefficient (Percent)	Storm Intensity (in/hr)	Sewer Overflow (MGD)	Present (Lbs/yr)	Future (Lbs/yr)
				Section IV - Chelsea to Bear Mountain Bridge						
Newburgh	30,000	2,300	13.0	--	3.00	35	0.048	24.9	--	259,000
Sub-Total	30,000	2,300							--	259,000
				Section V - Bear Mountain Bridge to New Jersey State Line						
Peekskill	18,000	2,880	6.3	3.00	1.80	25	0.051	22.5	218,000	218,000
Ossining	14,000	1,920	7.3	2.00	1.40	25	0.051	14.0	136,000	136,000
Briarcliff Manor	125	540	.23	0.044	0.01	20	0.051	3.5	34,000	34,000
N. Tarrytown	9,100	1,410	6.5	1.70	0.90	25	0.051	10.8	105,000	105,000
Tarrytown	10,000	1,790	5.6	1.50	1.00	25	0.051	14.2	138,000	138,000
Sub-Total	51,225	8,540							631,000	631,000
				Section VI - New Jersey State Line to The Narrows						
Hoboken, West New York, Union City & Weehawken	149,600	2,680	55.8	30.80	20.80	40	0.051	25.3	921,000	921,000
Edgewater	11,700	890	13.1	4.40	2.30	35	0.051	8.2	79,000	79,000
Yonkers	500,000	2,700	185.2	63.00	62.00	40	0.051	34.5	1,255,000	1,255,000
Manhattan	811,400	7,402	109.6	--	113.50	80	0.051	195.0	--	7,100,000
Red Hook	235,000	3,054	76.9	--	32.20	60	0.051	60.3	--	2,190,000
Owls Head	800,000	12,947	61.8	160.00	92.00	45	0.063	169.0	5,640,000	5,640,000
No. Bergen	15,000	550	27.3	3.30	2.00	35	0.051	5.0	182,000	182,000
Jersey City	160,000	3,880	41.2	46.00	29.10	40	0.063	46.1	1,531,000	1,531,000
Sub-Total	2,682,700	34,103							9,608,000	18,898,000

TABLE B-2 (cont'd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
									Combined Sewer BOD Load	
Combined Sewer Systems	Estimated Population Served	Area Served (acres)	Population Density (Persons/acre)	Treatment Plant Capacity (MGD)	Average Dry-Weather Flow (MGD)	Runoff Coefficient (Percent)	Storm Intensity (in/hr)	Sewer Overflow (MGD)	Present (Lbs/yr)	Future (Lbs/yr)
					Section VII - East River					
Wards Island	1,250,000	12,056	103.7	220.00	210.00	60	0.051	228.0	8,300,000	8,300,000
Hunts Point	703,000	16,664	42.2	150.00	120.00	40	0.051	189.0	6,870,000	6,870,000
Bowery Bay	637,000	15,203	41.9	120.00	100.00	40	0.051	180.0	6,550,000	6,550,000
Newtown Creek	763,600	11,394	67.0	310.00	110.00	60	0.103	255.0	4,720,000	4,720,000
Tallman's Island	390,000	16,860	23.1	60.00	42.00	35	0.051	176.0	6,400,000	6,400,000
Manhattan	291,400	2,775	10.5	--	41.00	80	0.051	73.0	--	2,660,000
Sub-Total	4,035,000	74,952							32,840,000	35,500,000
				Section VIII - Newark Bay and Kill Van Kull						
Bayonne	74,000	1,260	58.7	20.00	8.00	40	0.076	12.7	340,000	340,000
Jersey City	110,000	4,470	24.6	36.00	15.70	40	0.063	52.3	1,745,000	1,745,000
Port Richmond	131,000	7,740	16.9	10.00	10.00	35	0.051	89.0	863,000	863,000
Kearny	32,100	1,692	19.0	4.00	3.20	40	0.063	26.7	237,000	237,000
Sub-Total	347,100	15,162							3,185,000	3,185,000
Total	7,488,134	165,146							47,711,000	61,185,000

APPENDIX C

LIST OF FWPCA GRANTS AND CONTRACTS FOR THE INVESTIGATION OF STORM AND COMBINED SEWER OVERFLOWS

A listing of Federal Water Pollution Control Administration sponsored grants and contracts for the investigation of combined sewer overflows and stormwater runoff is provided in Tables C-1 and C-2. These grants and contracts are designed to assist projects which will develop or demonstrate a new or improved method of controlling the discharge into any waters of untreated or inadequately treated wastes from sewers which carry stormwater or both stormwater and sewage.

TABLE C-1

WATER POLLUTION CONTROL

STORM AND COMBINED SEWER GRANTS

FISCAL YEAR 1968

AWARDED UNDER SECTION 6(a)1 OF THE FEDERAL WATER POLLUTION CONTROL ACT, AS AMENDED

LOCATION/GRANTEE	PROJECT TITLE	GRANT NO.	ESTIMATED TOTAL PROJECT COST	FWPCA GRANT
CALIFORNIA				
City and County of San Francisco San Francisco	Treatment of Combined Sewer Overflows by the Dissolved Air Flotation Process	WPRD-258-01	1,463,000	921,000
IDAHO				
City of Meridian Meridian	Reduction of Ground Water Infiltration into Sewers by Zone Pumping	29-IDA-2	25,000	18,375*
ILLINOIS				
City of Chicago Chicago	Lawrence Avenue Overflow Sewer System	31-ILL-6	14,389,600	1,500,000*
City of Shelbyville Shelbyville	Systems Approach to Combined Sewer Storm Water Overflow Pollution Abatement	24-ILL-4	2,640,760	440,000*
Springfield Sanitary District Springfield	Evaluation of a Stabilization Pond for Treatment of Combined Sewer Overflows	3-ILL-1	199,140	86,570*

* Active in FY 1968 - Supported by funds awarded in previous years.

LOCATION/GRANTEE	PROJECT TITLE	GRANT NO.	ESTIMATED TOTAL PROJECT COST	FWPCA GRANT
INDIANA				
East Chicago Sanitary District East Chicago	East Chicago Treatment Lagoon	11-IND-1	3,116,533	1,044,120*
LOUISIANA				
Sewerage and Water Board New Orleans	Chlorination and Hypochlorination of Polluted Storm Water Pumpage	14-LA-1	1,429,000	1,034,250*
MASSACHUSETTS				
Merrimack College North Andover	Controlling Pollution from Combined Sewer Overflows and Storm Water by Electrode Potential	WPD-217-01-68	45,413	21,563
Metropolitan District Commission Boston	The Construction of a Storm Detention and Chlorination Station	7-MASS-1	4,345,650	1,000,000*
MICHIGAN				
City of Detroit Board of Water Commissioners Detroit	System Monitoring and Remote Control	4-MICH-1	2,113,000	1.000,000*
City of Mt. Clemens Mt. Clemens	A Combined Sewerage Collection and Treatment Facility	37-MICH-2	667,500	500,250
The Regents of the University of Michigan Detroit	Rainfall - Runoff Relations on Urban (and Rural) Areas	WP-00834-04	20,085 (1968-69)	18,986

* Active in FY 1968 - Supported by funds awarded in previous years.

LOCATION/GRANTEE	PROJECT TITLE	GRANT NO.	ESTIMATED TOTAL PROJECT COST	FWPCA GRANT
MINNESOTA				
Minneapolis-St. Paul Sanitary District St. Paul	Dispatching System for Control of Combined Sewer Losses	1-MINN-1	1,741,500	870,750*
City of South St. Paul South St. Paul	Demonstration Project for Temporary Detention of Storm and Combined Sewage in Natural Underground Formations	WPRD-249-01	380,000	385,000
City of South St. Paul South St. Paul	Efficiency and Economy of Polymeric Sewage Clarification	WPRD-111-01	845,159	450,000*
NEW HAMPSHIRE				
City of Somersworth Somersworth	Somersworth Combined Sewage Overflow Treatment Project	30-NH-1	931,800	559,080
NEW JERSEY				
Borough of New Providence New Providence	Utilization of High Rate Trickling Filters for Treatment of Combined Sewer Overflows	34-NJ-1	637,500	474,000
NEW YORK				
City of New York New York	Evaluation of Spring Creek Auxiliary Pollution Control Project	36-NY-2	1,126,000	843,750
City of New York New York	Wards Island Water Pollution Control Plant Ponsar Flow Regulating Siphon	25-NY-1	223,000	167,250*

* Active in FY 1968 - Supported by funds awarded in previous years.

LOCATION/GRANTEE	PROJECT TITLE	GRANT NO.	ESTIMATED TOTAL PROJECT COST	FWPCA GRANT
OHIO				
City of Cleveland Cleveland	A Program for Demonstrating Combined Sewer Overflow Control Techniques for Water Quality Improvement and Beach Protection	WPRD-234-01	1,030,000	325,162
City of Columbus Columbus	Modification of Whittier Street Storm Stand-by Tanks	27-OHIO-1	1,231,519	300,000*
Montgomery County Board of County Commissioners Kettering	The Determination of Ground Water Infiltration and the Effects of Internal Chemical Sealing of Sanitary Sewers	WPRD-211-01-68	137,000	96,570
TEXAS				
City of Dallas Dallas	Stormwater Treatment Facilities	WPRD-35-TEX-1	1,105,000	828,750
WASHINGTON				
Municipality of Metropolitan Seattle Seattle	Duwamish River-Elliot Bay Storm Water Contol System	13-WASH-1	3,891,900	1,400,000*
WASHINGTON, D. C.				
National Association of Counties - Research Foundation Washington, D. C.	Community Action Guide for Erosion and Sedimentation Control	15030 DTL	56,543	41,343

* Active in FY 1968 - Supported by funds awarded in previous years.

LOCATION/GRANTEE	PROJECT TITLE	GRANT NO.	ESTIMATED TOTAL PROJECT COST	FWPCA GRANT
WISCONSIN				
City of Chippewa Falls Chippewa Falls	Utilization of a Storage Pond with Treatment for Combined Sewer Overflows	22-WIS-2	773,983	289,685*
City of Milwaukee Milwaukee	Humboldt Avenue Overflow Detention and Chlorination Facility	10-WIS-1	2,118,118	1,468,589*

* Active in FY 1968 - Supported by funds awarded in previous years.

TABLE C-2

WATER POLLUTION CONTROL

STORM AND COMBINED SEWER CONTRACTS

FISCAL YEAR 1968

AWARDED UNDER SECTION 6(a)1 OF THE FEDERAL WATER POLLUTION CONTROL ACT, AS AMENDED

LOCATION/CONTRACTOR	PROJECT TITLE	CONTRACT NO.	AMOUNT
CALIFORNIA			
Acoustica Associates Los Angeles	Demonstrate Feasibility of Use of Ultrasonic Filtration in Treating Overflows from Combined and/or Storm Sewers	14-12-23	$ 75,693*
Aerojet-General Corp. El Monte	A Method for Assessing the Extent of Pollution from Storm Water Run-off in an Urban Area	14-12-197	402,594
Aerojet-General Corp. El Monte	Role of Solids in Combined Sewage Pollution	14-12-180	92,605
American Process Equipment Corp. Los Angeles	Fabrication and Evaluation of a Ultrasonic System for Treating Sewage	14-12-195	248,500
FMC Corporation Santa Clara	Feasibility of a Periodic Flushing System for Combined Sewer Cleansing	14-12-19	31,093*
FMC Corporation Santa Clara	Feasibility of a Periodic Flushing System for Combined Sewer Cleansing	14-12-19	1,278
FMC Corporation Santa Clara	Evaluation of a Periodic Flushing System for Combined Sewer Cleansing	14-12-466	323,600
Metcalf & Eddy, Inc. Engineers Palo Alto	Engineering Investigation of the East Bay Municipal Utility District of the San Francisco Bay Area (Oakland)	14-12-407	141,300

* Active in FY 1968 - Supported by funds awarded in previous years.

LOCATION/CONTRACTOR	PROJECT TITLE	CONTRACT NO.	AMOUNT
CALIFORNIA (Cont'd.)			
Metcalf & Eddy, Inc. Palo Alto	Triumvirate, Storm Water Pollution Control Management	14-12-502 (11024 DOC)	$253,800
Water Resources Engineers, Inc. Walnut Creek	Triumvirate, Storm Water Pollution Control Management	14-12-501 (11024 EBI)	114,860
DISTRICT OF COLUMBIA			
Economic Systems Corp., AYCO Washington	Develop the Relation between Land-Use Practices and Influence of Pollution in Urban Storm Water	14-12-187	114,300
Underwater Storage Inc. Washington	Demonstrate Underwater Facility to Provide Temporary Storage of Storm Overflows from a Combined Sewer	14-12-42	97,714*
Underwater Storage Inc. and Silver Schwartz Ltd. Washington	Pilot Demonstration Underwater Storage Facility for Storm Water Overflow	14-12-139	573,067
FLORIDA			
University of Florida Department of Environmental Engineering Gainesville	Triumvirate, Storm Water Pollution Control Management	14-12-503 (11024 EBJ)	144,990
GEORGIA			
Black, Crow & Eidsness Atlanta	An Engineering Investigation of Combined Sewer Problems of Atlanta, Georgia	14-12-458	263,826

* Active in FY 1968 - Supported by funds awarded in previous years.

LOCATION/CONTRACTOR	PROJECT TITLE	CONTRACT NO.	AMOUNT
ILLINOIS			
American Public Works Association Chicago	Analysis of Regulator Facilities, Their Application and Maintenance Practices	14-12-456	$ 65,000
American Public Works Association-Research Foundation Chicago	Causes, Extent and Control of Infiltration		
American Public Works Association Chicago	Study Methods for Reducing Water Pollution from Storm Sewer and Combination Discharges through Defined Public Work Practices	WA-66-23	104,000*
American Public Works Association Chicago	The Problems of Combined Sewer Facilities and Overflows in United States Communities	14-12-65	250,000
MARYLAND			
Bowles Engineering Corp. Silver Spring	Fluidic Interceptor Study	14-12-486 (11020 DGZ)	58,891
Hercules Incorporated Cumberland	A Feasibility Study of Utilizing a Self-Cleaning, Self-Adjusting Spiralloy Filter	14-12-39	108,293
Hittman Associates Baltimore	System Study, Design and Evaluation of Local Storage, Treatment and Reuse of Water	14-12-20	197,724
MASSACHUSETTS			
Ionics Incorporated Watertown	Feasibility of High Current Density Hypochlorite Generation	14-12-490 (11023 DAA)	74,646

* Active in FY 1968 - Supported by funds awarded in previous years.

LOCATION/CONTRACTOR	PROJECT TITLE	CONTRACT NO.	AMOUNT
MICHIGAN			
Dow Chemical Company Midland	Demonstrate the Use of Polymeric Flocculants for Improved Efficiency in the Treatment of Combined Sewer Overflows at the Milk River Pumping Station	14-12-9	$700,000*
Dow Chemical Company Midland	Rock Creek Clarification Project (Washington, D. C.)	14-12-170	52,604
NEBRASKA			
Henningson, Durham, & Richardson Omaha	An Engineering Investigation of Storm and Combined Sewer Problems	14-12-402	301,200
NEW JERSEY			
American Standard Incorporated New Brunswick	Develop a Suspended Solids Monitor	14-12-494	121,946
NEW YORK			
American Society of Civil Engineers New York	Feasibility and Development of New Methods of Separating Sanitary Sewage from Combined Sewerage Systems	14-12-29	343,210
OHIO			
Burgess & Nipple, Limited Consulting Engineers Columbus	Develop the Relation Between Land-Use Practices and Increase of Pollution in Urban Stormwater	14-12-401	136,665
Havens and Emerson Consulting Engineers	Feasibility Study and a Preliminary Design of a Full-Scale Stabilization Retention Basin to be Installed in Lake Erie and to Serve the Demonstration Area Within the Easterly Sewer District	14-12-27	87,616*

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* Active in FY 1968 - Supported by funds awarded in previous years.

LOCATION/CONTRACTOR	PROJECT TITLE	CONTRACT NO.	AMOUNT
OHIO (Cont'd.)			
Karl R. Rohrer Associates Akron	Design, Construction, and Operation of a Facility to Demonstrate Offshore Underwater Temporary Storage of Storm Overflow from a Combined Sewer	14-12-143	$498,248
Rand Development Corporation Cleveland	Design, Construction, Operation and Evaluation of a Rapid-Flow Combustile Filter for Treatment of Combined Sewer Overflow	WA-67-2	300,000*
OKLAHOMA			
Rhodes Corporation Oklahoma City	Demonstration Project of a Prototype Treatment Plant Designed to Treat Wastes Found at a Combined Sewer Overflow	14-12-11	256,448*
Rhodes Corporation Oklahoma City	Demonstration Project of a Prototype Treatment Plant Designed to Treat Wastes Found at a Combined Sewer Overflow	14-12-11	61,285
OREGON			
Cornell, Howland, Hayes and Merrifield Corvallis	Primary Treatment of Storm Water Overflow from Combined Sewers by High Rate Fine Mesh Screens	14-12-128	139,331
PENNSYLVANIA			
Glenfield and Kennedy Inc. King of Prussia	Microstraining Pilot Tests	14-12-136	186,086

* Active in FY 1968 - Supported by funds awarded in previous years.

LOCATION/CONTRACTOR	PROJECT TITLE	CONTRACT NO.	AMOUNT
PENNSYLVANIA (Cont'd.)			
R. F. Weston West Chester	Develop and Demonstrate a Method for Assessing the Extent of Pollution from Storm Water Run-off in an Urban Area	14-12-403	$223,514
The Franklin Institute Philadelphia	Selected Abstracts of Storm Water Discharges and Combined Sewer Overflows	14-12-467	8,946
RHODE ISLAND			
Fram Corporation Providence	Feasibility Investigation of a Self-Cleaning Strainer and a Self-Cleaning Filter	14-12-17	32,733
TEXAS			
Western Company Richardson	Methods to Reduce Water Pollution Caused by Storm Water Sewer Loading by Using Fluid Flow Friction Reducers	14-12-34	300,178*
Western Company Richardson	Methods to Reduce Water Pollution Caused by Storm Water Sewer Loading by Using Fluid Flow Friction Reducers	14-12-34	76,000
Western Company Richardson	Development and Demonstration of Materials to Reduce or Eliminate Water Infiltration Into Sewerage	14-12-146	96,702
VIRGINIA			
Hayes, Seay, Mattern and Mattern Roanoke	Engineering Investigation of Combined Sewer Overflow Problem	14-12-200	104,191
Melpar, Incorporated Falls Church	Construction of a Facility to Demonstrate Off-Shore Underwater, Temporary Storage of Storm Overflow from a Combined Sewer	14-12-133	411,305

* Active in FY 1968 - Supported by funds awarded in previous years.

LOCATION/CONTRACTOR	PROJECT TITLE	CONTRACT NO.	AMOUNT
WISCONSIN			
Allis-Chalmers Milwaukee	Design, Construction, Operation and Evaluation of a Demonstration Waste Treatment Device Termed the Rotating Biological Contractor	14-12-24	$388,526
Rex Chainbelt, Inc. Milwaukee	Demonstration of the Applicability of Screening and Chemical Oxidation of Storm and Combined Sewage	14-12-40	197,989

* * *

That is the report on the Combined Sewer Overflows.

I will now read, as indicated by Mr. Klashman, a report based on the operation of the treatment facility of the Passaic Valley Sewerage Commissioners.

On June 9, 1969, an inspection was made at the Passaic Valley Sewerage Commissioners Waste Treatment Facility located on Newark Bay. The subject waste treatment facility receives waste from an estimated population of 1,200,000 people and approximately 700 industries. The facility consists of grit removal, course screening and sedimentation with discharge of the effluent to upper New York Harbor near Robbins Reef.

Sludge generated in the treatment process is thickened, stored, and discharged to barges for disposal in the Atlantic Ocean. Grit and screening are disposed of in sanitary landfills at the plant site.

The facility is designed for a flow of

225 million gallons per day. Average flow to the facility ranges from 240 to 250 million gallons per day, and during periods of storm can be greater than 500 million gallons per day. Plant personnel collect data on the influent to the plant, but have not collected data on the effluent since January 1, 1969. A program to continue the collection of effluent data was recently instituted.

At the time of the investigation, the following conditions were observed:

(1) The flow through the plant was approximately 240 million gallons per day.

(2) Grit was being manually removed from the grit chambers with a clam shell bucket. Grit washing equipment was not in operation. Present grit volume exceeds the capacity of the washing equipment.

(3) Twenty of the 64 existing sedimentation basins were down for repairs. In addition, the automatic valves for withdrawing sludge from two additional basins were inoperative and were being operated manually.

(4) Although maintenance crews were working on repairs in the 20 sedimentation basins which were down for repairs, it was not apparent that maintenance was

being performed on the 44 operating basins. This was apparent from the buildup of scum behind the manually operated scum troughs which were not functioning. There was also a buildup of scum and solids around the discharge weirs of many of the basins. The absence of personnel providing routine cleaning of the sedimentation basins indicates that these procedures may not be pursued on a regular basis. Many of the overflows weirs were not properly adjusted. Several were submerged at the time of inspection.

It could not be estimated when the 20 inactive sedimentation basins would be returned to service. Information was not available regarding the average number of basins which might be inoperative at any given time.

(5) Inspection of the plant operating records for May 1969, which was the influent only, indicated the following:

BOD, 348 mg/l;

COD, 750 mg/l;

Total Solids, 1,913 mg/l;

Suspended Solids, 414 mg/l;

Settleable Solids, 19.7 mg/l.

(6) Samples were collected for Imhoff Cone analysis during the inspection. A sample was collected from both the influent and the effluent. The results indicated that the influent contained approximately 25 ml/l of solids and the effluent contained less than 1 ml/l of solids.

(7) It is estimated that the treatment facility at the Passaic Valley Sewerage Commissioners is presently removing approximately 10 per cent of its incoming biochemical oxygen demand load.

During the inspection it was indicated that there were operational difficulties at the treatment facility. The main difficulty was in inadequately designed grit removal chambers. Because of this problem, grit proceeds to the sedimentation basins and causes frequent breakdowns of mechanical equipment forcing the shutdown of many basins for repair. This was evidenced during the time of inspection by the fact that 20 basins were down for repairs.

The Passaic Valley Sewerage Commissioners has a report concerning the need for new grit removal facilities. It was understood that they were about to contract for the design of these facilities.

SUMMARY

It was indicated that to effectively treat the average flow to the plant all existing basins should be in operation. At the time of the inspection, 20 of these basins, or approximately one-third of them, were down for repairs. Settleable solids removal based on Imhoff Cone analysis appeared satisfactory. It appeared that routine maintenance of the operating sedimentation basins was not carried out on a regular basis.

I would like to supplement this with a survey which has been conducted in the Passaic River, which is entirely within the confines of the service area of the Passaic Valley Sewerage Commissioners. I am talking here about that stretch of the Passaic River from Newark Bay up to approximately Little Falls, New Jersey.

The State of New Jersey has classified the waters of the Passaic Basin. The Passaic River above Little Falls is classified as FW-2. The River from Little Falls to Dundee Dam is classified as FW-3. The stretch of river from Dundee Dam to the confluence with Newark Bay has been classified TW-3. The water quality criteria to meet these classifications are attached.

The Passaic River is tidal for about 17

miles from Dundee Dam, located near the Garfield-East Paterson Township lines, to Newark Bay. The remaining portion of the basin in nontidal.

Dissolved oxygen (DO) in the nontidal portion was generally above 6.0 mg/l, reaching a maximum of 9.8 mg/l at Dundee Dam. DO in the nontidal portion decreased rapidly to 0.0 mg/l in the vicinity of Harrison. It increased gradually to about 2.0 mg/l in the upper portions of Newark Bay.

Total coliform concentrations in the nontidal portion increased from about 10,000/100 ml above the PVSC service area to about 70,000/100 ml two and-a-half miles above Dundee Dam (East Paterson). Concentrations dropped to about 20,000/100 ml just below Dundee Dam and increased to 500,000/100 ml at the confluence of the Passaic River with Newark Bay. Concentrations dropped to 17,000/100 ml in the Bay.

Fecal coliform concentrations followed the same pattern as total coliform. Concentrations were about 500/100 ml above the PVSC service area and increased to about 4,000/100 ml at Dundee Dam. Below the dam, concentrations were about 2,100/100 ml and increased to about 70,000/100 ml at the confluence with Newark Bay. Concentrations dropped to about 2,000/100 ml in Newark Bay.

There was no significant variation of temperature or pH in the Passaic River within the PVSC service area.

A survey of the Passaic River within the PVSC service area revealed outfall pipes at approximately 56 different locations. At each location, at least one and occasionally several outfall pipes were evident. These outfalls may discharge storm water runoff, combined sewer overflow or discharges from industries located along the banks of the river. At 42 of these locations actual discharges were observed. The character of the discharges varied from highly colored to relatively clear. A probable identification of the source of the outfall pipes was made at 15 locations.

The shoreline of the tidal portion of the Passaic River is littered with debris and there are many dump sites. These sites contribute debris and other esthetically unpleasant material to the waters of the Passaic River.

Summary

Water quality conditions in the Passaic River within the PVSC service area were particularly degraded in the tidal portion below Dundee Dam. Dissolved oxygen in the lower ten miles were less than the 2.5 mg/l recommended by the standards for this area. No criteria exist in this area for total and fecal coliform.

In the non-tidal portion between Little Falls and Dundee Dam, the Total Coliform densities exceeded the recommended criteria. It should be recognized that this statement is based on one sample, while the criteria indicate an average during any monthly sampling period. The DO criteria was not violated in this stretch.

Approximately 41 of the outfall pipe locations of the 56 that were found were located in the tidal portion, and these may contribute material which results in the poor quality of this section.

Mr. Chairman, that is the end of my statement.

SECRETARY KLEIN: Thank you.

Are there any questions by the conferees?

MR. SULLIVAN: The plant that was just discussed in terms of pollution is a bomb, and we will talk about it ourselves in detail tomorrow, including the Court action in which we are now engaged.

SECRETARY KLEIN: Thank you.

Mr. Metzler?

MR. METZLER: I would like to defer my questions about this until after I have heard all of the testimony involving this.

SECRETARY KLEIN: It might be well if we deferred all questions until the State of New Jersey puts in their statement, since it will be along the same lines.

Mr. Klashman, could you have Mr. Bromberg available at that time?

MR. KLASHMAN: Yes, he will be available.

SECRETARY KLEIN: Fine.

MR. STEIN: I have a question, if I may, Mr. Chairman, on storm water, with respect to the first part of the report.

SECRETARY KLEIN: Yes?

MR. STEIN: In your summary and conclusions, you talk about the fact that studies are needed in the conference area to determine several things: The quantitative and qualitative characteristics of combined sewer overflow, and the effect of combined sewer overflow on the quality of the receiving water. You say that these studies are required before we can move to remedial action.

The question that I would like to ask you is: To what extent do you think these studies should be, and, Number Two, who do you think should do them if this is going to be a proposal for consideration by the conferees?

MR. BROMBERG: As I have tried to indicate during the reading of this report, the combined sewer overflow problem in the conference area is quite significant, just by virtue of the fact that there are 43 separate systems which discharge combined sewer overflows, and any one of these systems may have more than one discharge point.

It would be quite a serious undertaking or an intense undertaking to study, first of all, the characteristics of the combined sewer overflow and its effect on the receiving water.

Within the conference area this has not been done. It has been done in other areas, but not within the conference area.

MR. STEIN: I understand that.

What I am trying to get at, and the conferees are going to have to go into this if we are going to consider your report on storm water overflow before we adjourn this session of the conference, is what magnitude of a study this entails, about how much money it is going to require, and who is going to do it? I think these are the things that the conferees are going to have to consider.

Can you give us a judgment on that at all?

MR. BROMBERG: My judgment at this point is that if a study is undertaken, it should be undertaken with the states and with the Federal Water Pollution Control Administration.

At this point, I cannot estimate the cost of such a study.

MR. STEIN: I wonder if you can get together on this with your colleagues in the states and the interstate agency while we are here, because I think the conferees are going to need all the help they can get in trying to come to a recommendation on this to the State agencies and the interstate agency, if we make it, and to the Secretary of the Interior if we go back with this.

We are going to have to know (1) what the estimated resources are going to be that are needed; (2) how long it is going to take; and (3) approximately how much it is going to cost. Without knowing the answers to those questions, I am not sure we will be able to reach meaningful action. I hope you give that consideration in the next day or so.

MR. KLASHMAN: May we submit that for the record?

SECRETARY KLEIN: If you will come up with the facts and figures, put it in as part of the written record, we would appreciate it, giving potential costs and potential action on this study.

I have several questions that I think should be cleared up. One is just a question of definitions.

Would you define for the audience the Imhoff Cone analyses and what the "25 and less than 1 ml/l" means?

MR. BROMBERG: Imhoff Cone analysis is where a sample is taken from, in this particular case, the influent to a treatment plant and the effluent of a treatment plant.

The sample is placed in a glass cone which holds 1 liter. It is allowed to stand for one hour. After one hour's time, you measure the solids which have settled in this cone.

With reference to the sample which was analyzed at the Passaic Valley Sewerage Commissioners facility, I believe I indicated that the concentrations were approximately 25 ml/l in the influent and less than one ml/l in the effluent. This gives you an indication of that plant's ability to remove settleable solids.

SECRETARY KLEIN: With reference to the classifications you have mentioned, the FW-2, as I understand it, is water which is potable for human use; is that correct?

MR. BROMBERG: The definition is:

"Fresh surface waters approved as sources of public potable water supply."

SECRETARY KLEIN: And FW-3?

MR. BROMBERG: FW-3:

"Fresh water suitable for all purposes provided for under Class FW-2, except public potable water supply."

SECRETARY KLEIN: Then you also have a classification of TW-3.

MR. BROMBERG: Yes. TW-3 is:

"Tidal surface waters used primarily for navigation,"not recreation.

SECRETARY KLEIN: I have no further questions. I just wanted to get the definitions. We will let the consequences of the report wait until later.

Mr. Bromberg, if you will make yourself available at the end of the New Jersey presentation, I would appreciate it.

MR. BROMBERG: Thank you.

SECRETARY KLEIN: Thank you very much.

MR. KLASHMAN: I would now like to call on Mr. Ed Conley, who is Chief of our Federal Activities program in the Northeast Regional Office of the Federal Water Pollution Control Administration, who will give us a status report on Federal installations in the conference area.

STATEMENT BY
MR. EDWARD CONLEY
FEDERAL ACTIVITY COORDINATOR
NORTHEAST REGION
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

MR. CONLEY: Mr. Chairman, conferees, ladies and gentlemen:

I am Edward Conley, Federal Activity Coordinator for the Northeast Region of the Federal Water Pollution Control Administration.

The following is a status report on water pollution control activities of Federal installations in the Hudson River Enforcement Conference area.

Executive Order 11288 requires heads of Federal departments, agencies and establishments to provide leadership in the national effort to improve water quality through the prevention, control, and abatement of water pollution from Federal activities in the United States. The Order requires that the Secretary of the Interior provide the necessary review, coordination, and technical advice for all Federal departments, agencies, and establishments. The Federal installations, in turn, are required to cooperate with the Secretary, State and interstate agencies, and municipalities insofar as practicable and consistent with the interests of the United States and within available appropriations. Water pollution control requirements must be considered and included in the initial stages of planning for each new installation or project. Phased and orderly plans for installing water pollution abatement facilities at existing installations must be developed and periodically revised as required. Implementation of the Executive Order is carried out by the Federal Activities Section of the Federal Water Pollution Control Administration.

The Federal installations in the Hudson River conference area are listed in Table I. Also included in this table are the present sanitary and industrial waste flows and their disposition at each installation. A brief description of the waste disposal practices of the major sources of sanitary and industrial wastes from Federal installations follows.

Military Ocean Terminal, Brooklyn, New York (U. S. Army)

All wastes generated at this facility except for 500 gpd of sanitary wastes are discharged to the New York sewer system. The 500 gpd of sanitary wastes, which are from the gatehouse building, are discharged to New York harbor without treatment. FWPCA has recommended that by June 1970 plans be developed and implemented for this building to be connected to the base collection system which discharges to the New York sewer system.

At the present time the piers at this installation are inactive. If the piers are used again, however, it is recommended that a system be installed to collect the wastes from the piers and the berthed ships, if possible, and transport them to the base sanitary collection system.

Military Ocean Terminal, Bayonne, New Jersey (U. S. Army)

The wastes from this facility presently receive primary treatment. Secondary treatment and chlorination facilities are presently being designed. A construction contract for these facilities is scheduled to be awarded in November 1969 and completed by November 1970.

U. S. Military Academy, Highland Falls, New York (U. S. Army)

The wastes from the main post area of this facility are presently treated and chlorinated in two primary treatment plants. The design of a secondary treatment plant to replace the two primary plants has been completed.

At Camp Buckner, a training camp area used during the summer months only, an intermediate treatment plant (chemical precipitation) is presently being used to treat 240,000 gpd of wastes. Secondary treatment facilities have been designed for this facility.

The funds for construction of the above

facilities, originally appropriated for FY-1968, were reassigned to other portions of the expansion program, and the pollution control facilities were re-programmed for FY-1971.

The wastes from the Golf Clubhouse--1,300 gpd--are treated by a septic tank, subsurface sand filter, and chlorination. No improvements are necessary at this facility.

Watervliet Arsenal, Watervliet, New York (U. S. Army)

All sanitary wastes are discharged to the municipal sewer system. The industrial wastes from this installation are now discharged untreated to the Hudson River. The quantities and compositions of these wastes are subject to wide variations depending upon the levels of production. An industrial waste treatment plant is being built to treat a total of 35,000 gpd of wastes. This plant has been designed to treat cyanide wastes, acid and metal-bearing wastes, and oil-bearing wastes.

The treatment plant is about 95 per cent completed and should be operating by November 1969. When this plant is operating, there will be no discharge of untreated wastes from this installation.

Governors Island Coast Guard Base, New York, New York (U. S. Coast Guard)

The wastes from this facility are now discharged untreated to New York Harbor. Design plans of a collection system, pumping station, and channel crossing and tie-in to the Brooklyn sewer system are completed. The construction contract for the channel crossing was awarded on April 28, 1969. Completion of construction of the last phase of these facilities is scheduled for July 1971.

A sewage collection system now exists on the piers atthis base. When the onshore collection system is completed, the collection system on the piers will be connected to it, and the wastes from the berthed vessels will be pumped to the collection system and then discharged to the Brooklyn sewer system.

Coast Guard Base, St. George, Staten Island, New York (U. S. Coast Guard)

The installation is now used for Reserve training activities which take place on Saturdays and Sundays only. Approximately 125 men attend the training activities which are 8 hours per day. There are also two security officers on duty 24 hours per day, seven days per week.

A new training center is scheduled for

completion by January 1971 at Governors Island. When this facility is completed, all training activities which now take place at St. George will be moved to Governors Island. However, if the Coast Guard determines that it will continue operations at this base after the training center is operating at Governors Island, it is recommended that facilities be completed to adequately treat the wastes from this base by January 1972.

Throgs Neck Light Station, New York, New York (U. S. Coast Guard)

The Coast Guard is investigating the possibility of connecting this installation to the Fort Schuyler (New York State Maritime College) sewer system. If this connection is acceptable and feasible, then it will be scheduled for completion in FY-1970.

If the connection proposal is not feasible, then an incinerator toilet or another acceptable treatment method will be implemented in FY-1970.

Troy Lock and Dam, Troy, New York (U. S. Army-Corps of Engineers)

Approximately 450 gpd of sanitary wastes from this installation are discharged to the Troy sewer system. An incinerator toilet is used in the lockhouse.

The tugboat, which is used sparingly, is equipped with a macerator-chlorinator system.

Approximately 260 gallons of untreated sanitary wastes from the lockkeeper's house are discharged daily to the Hudson River. Connection of this discharge to the City of Troy's sewer system is scheduled as soon as the City completes adequate sewage treatment facilities which is expected to be by December 1972.

Medical Supply Agency, Brooklyn, New York (General Services Administration)

This installation is now used as an office building by the General Services Administration (GSA). The GSA has completed plans to connect its waste discharges to the proposed New York City sewer system. It is expected that the City's facilities in this area will be completed by December 1973.

Hudson River Reserve Fleet, Jones Point, New York (U. S. Maritime Administration)

A personnel barge is used for the administrative offices of this installation. This barge is equipped with a macerator-chlorinator, as are the other barges and tugboats which have toilet facilities on board. Chemical toilets are used by maintenance workers while working on the ships.

The Maritime Administration has determined that this fleet will be reduced to custodial status during FY-1970 and phased out completely by 1974 or 1975.

Statue of Liberty, New York, New York (National Park Service)

The average daily sanitary sewage discharge is 7,400 gallons, with an average peak daily flow of 18,000 gallons occurring in the summer months. Partial treatment is provided by a septic tank which discharges directly to the harbor.

Plans have been completed for a pumping station and force sewer main to discharge the sewage from this facility to the Jersey City, New Jersey, sewer system. The scheduled date to begin construction of these facilities is August 1969 and completion estimated to be February 1970.

U. S. Public Health Service Hospital, Staten Island, New York (USPHS)

All the wastes generated at this hospital except for 19,000 gpd of sanitary wastes are discharged to the New York sewer system.

The 19,000 gpd of sanitary wastes are now discharged to a combined sewer system which discharges to New York Harbor without treatment. New York City has agreed to build a regulator structure which will intercept the sanitary sewer line from the hospital. The City's interceptor, which will pick up the 19,000 gpd of sanitary wastes from the hospital, is scheduled for start of construction in June 1970. Completion of construction of the interceptor and the sewage treatment plant is scheduled for June 1973.

V. A. Hospital, Castle Point, New York (Veterans Administration)

The wastes from this facility presently receive primary treatment and chlorination. Secondary treatment facilities are under construction and are scheduled for completion in April 1970.

V. A. Hospital, Montrose, New York (Veterans Administration)

The wastes from this facility presently receive primary treatment and chlorination. Secondary treatment facilities are under construction and are scheduled for completion in June 1969.

TABLE I

FEDERAL INSTALLATIONS IN THE HUDSON RIVER CONFERENCE AREA

Installation	Agency	Location	Discharge Quantity in GPD		Discharged to	Comments
			Sanitary	Industrial		
Military Ocean Terminal	Army	Brooklyn, N.Y.	500		New York Harbor	Discharged untreated. Should connect discharges from building to New York sewer system by June 1970.
Military Ocean Terminal	Army	Brooklyn, N.Y.	112,000		New York Sewer System	
Military Ocean Terminal	Army	Bayonne, N.J.	90,000		New York Harbor	Primary treatment. Secondary treatment facilities are in the design phase. Construction should be completed by November 1970.
U.S. Military Academy	Army	Highland Falls, N.Y.	650,000		Hudson River	Primary treatment & chlorination. Secondary treatment facilities are designed. Proposed construction in FY-71.
U.S. Military Academy	Army	Highland Falls, N.Y.	500,000		Hudson River	Primary treatment & chlorination. Secondary treatment facilities are designed. Proposed construction in FY-71.
U.S. Military Academy	Army	Highland Falls, N.Y.	240,000 (summer months only)		Popolopen Creek	Intermediate treatment & chlorination. Secondary treatment facilities are designed. Proposed construction in FY-71.

FEDERAL INSTALLATIONS IN THE HUDSON RIVER CONFERENCE AREA

Installation	Agency	Location	Discharge Quantity in GPD Sanitary	 Industrial	Discharged to	Comments
U.S. Military Academy	Army	Highland Falls, N.Y.	1,300 (seasonal)		Triburary to Highland Brook	Septic tank, subsurface sand filter, and chlorination. Adequate treatment provided.
Watervliet Arsenal	Army	Watervliet, N.Y.	102,400		Watervliet Sewer System	
Watervliet Arsenal	Army	Watervliet, N.Y.		35,000	Hudson River	Construction of an industrial waste treatment plant 95% complete. Should be operational by November 1969.
Troy Lock & Dam	Army Corps of Engineers	Troy, N.Y.	450		Troy Sewer System	
Troy Lock & Dam	Army Corps of Engineers	Troy, N.Y.	260		Hudson River	Discharged untreated. Should be connected to municipal sewer system by December 1972, which is the expected date when adequate treatment facilities will be available.
U.S. Storehouse	Army Corps of Engineers	Albany, N. Y.	-	-		Abandoned-moved facility to Troy Lock and Dam.
Coast Guard Station	Coast Guard	Governors Island	560,000		New York Harbor	Discharged untreated. Design of connection to Brooklyn sewer system complete. Construction should be completed by July 1971.

FEDERAL INSTALLATIONS IN THE HUDSON RIVER CONFERENCE AREA

Installation	Agency	Location	Discharge Quantity in GPD		Discharged to	Comments
			Sanitary	Industrial		
Coast Guard Base (St. George)	Coast Guard	Staten Island, N.Y.	100		New York Harbor	Discharged untreated. Facility is scheduled to be phased out by January 1971.
Coast Guard Base (St. George)	Coast Guard	Staten Island, N.Y.	1,900 (weekends only)		New York Harbor	Discharged untreated. Facility is scheduled to be phased out by January 1971.
Robbins Reef Light Station	Coast Guard	New York Harbor	-			Station is automated. No men stationed at facility.
North Brother Island Light Station	Coast Guard	East River New York, N.Y.	400		East River	Discharged untreated. Scheduled to be automated in FY-70.
Throgs Neck Light Station	Coast Guard	New York, N. Y.	500		East River	Discharged untreated. Remedial measures scheduled for FY-70.
Stony Point Light Station	Coast Guard	Stony Point, N.Y.	500		Hudson River	Discharged untreated. Installation of a spetic tank, and leaching field or an incinerator toilet scheduled for FY-70.
Medical Supply Agency	G.S.A.	Brooklyn, N.Y.	118,000		New York Harbor	Discharged untreated. Construction of a connection to New York sewer system should be completed by December 1973.
Hudson River Reserve Fleet	Maritime Admin.	Jones Point, N.Y.	1,600		Hudson River	Treatment provided by macerator-chlorinator systems.

FEDERAL INSTALLATIONS IN THE HUDSON RIVER CONFERENCE AREA

Installation	Agency	Location	Discharge Quantity in GPD Sanitary	 Industrial	Discharged to	Comments
Statue of Liberty	National Park Service	Liberty Island New York, N.Y.	7,400 (average) 18,000 (summer)		New York Harbor	Septic tank presently used. Plans are completed to tie into Jersey City sewer system. Start construction by August 1969.
Naval Station	Navy	Brooklyn, N.Y.	182,400		New York Sewer System	This facility is the former Brooklyn Navy Yard.
Naval Reserve Training Center	Navy	New York, N.Y.	500		New York Sewer System	
U.S. Public Health Service Hospital	Public Health Service	Staten Island, N.Y.	177,000		New York Sewer System	
U.S. Public Health Service Hospital	Public Health Service	Staten Island, N.Y.	19,000		New York Harbor	Discharged untreated. Construction of a connection to New York sewer system will begin in June 1970.
Quarantine Station	Public Health Service	Staten Island, N.Y.			New York Sewer System	
V.A. Hospital	Veterans Administration	Castle Point, N.Y.	70,000		Hudson River	Primary treatment & chlorination. Secondary treatment facilities under construction; will be operational by April 1970.
V.A. Hospital	Veterans Administration	Montrose, N.Y.	230,000		Hudson River	Primary treatment & chlorination. Secondary facilities under construction; will be operational by June 1969.

SECRETARY KLEIN: Thank you very much.

Are there any questions?

Mr. Sullivan.

MR. SULLIVAN: I have one short question:

I wonder if you know what led the U. S. Army to decide with regard to the terminal in Bayonne to construct its own treatment facility rather than hook in with the City of Bayonne in keeping with the State's policy on regionalization?

MR. CONLEY: The Army was directed by the Office of the Chief Engineer to continue a design for a separate secondary treatment plant at the installation.

The Army felt that it would cost more money to tie into the municipal system than it would to operate it on their own. However, they have not completely eliminated the possibility of tying into the City of Bayonne, which we have recommended them to do.

MR. SULLIVAN: Do you happen to know what the cost discrepancy is?

MR. CONLEY: No, sir, I do not.

SECRETARY KLEIN: It may be that that might be better answered by the District Engineer, Mr. Sullivan, who would have absolute knowledge of it, rather than Mr. Conley's, which is secondary, so if you would please defer that, I believe we are going to have the engineer testify.

Mr. Metzler?

MR. METZLER: You may have the same ruling on the question I was about to ask, but I was thinking of the question of at what point money was appropriated to upgrade the sewage treatment plant, at West Point, N. Y. in FY 1968.

SECRETARY KLEIN: Col. Crandall is here, and when he testifies I think it would be better to ask him, if you would reserve that, Mr. Metzler, please.

MR. METZLER: There is one other point I would like to make here, if I may.

I notice with reference to the facilities for disposing of sewage on barges you are using macerator-chlorinators. It seems to me that that is a good interim measure, and you folks who have done this should be complimented on moving ahead towards legislation which would require something better, which would be very clear on the basis of studies which the Federal Water Pollution Control Administration and others have made, but macerator-chlorinators are not an acceptable way of disposing of sewage from boats in waters that are used as a source of public water supply, bathing, and other uses.

MR. CONLEY: Yes, sir. We are no longer recommending their use.

MR. METZLER: The State of New York had a rather complete review of this whole matter down to the technical details at this last session of the Legislature. I just wanted to make that point there.

MR. CONLEY: These were installed three, four and five years ago.

MR. STEIN: You recollect, Mr. Metzler, that we took the lead in the Federal Government in trying to get macerator-chlorinators installed on boats when there was still a very real problem of what devices would be appropriate for boats, and we did that as a demonstration project.

The conclusions we arrived at on Lake Erie and Lake Michigan in New York and various other places was as a result of the experience that we had with the macerator-chlorinators as demonstrated, and I think your remarks are very well taken.

Thank you.

SECRETARY KLEIN: I may say in regard to this legislation pending in Congress--and I think everyone here knows about it--with regard to Marine Sanitation Devices that the standards will have to be developed if that legislation becomes law.

Mr. Glenn?

MR. GLENN: No questions.

SECRETARY KLEIN: No questions by Mr. Glenn. Mr. Klashman?

MR. KLASHMAN: Mr. Conley, I wonder if you could comment, to supplement Mr. Metzler's question, on the Maritime Administration Hudson River Fleet.

MR. CONLEY: Yes, sir.

MR. KLASHMAN: On the barges, have you had any discussions with the Maritime Administration about what is going to happen when New York State actually is in a position to start enforcing a stricter regulation in that area? What will the barges do?

MR. CONLEY: If the barges are still there, we will probably recommend some onshore disposal system be worked out. We think right now it is feasible to pump from the barges onto shore.

MR. KLASHMAN: Could we say, instead of "probably," that you will recommend it?

MR. CONLEY: We will recommend it.

MR. KLASHMAN: All right. Thank you very much.

In other words, we will keep up with New

York State as far as the Federal Government is concerned. We have discussed this with the Maritime Administration.

SECRETARY KLEIN: Mr. Klashman, anything further?

MR. KLASHMAN: I have no further questions.

SECRETARY KLEIN: All right. Thank you very much, Mr. Conley.

MR. KLASHMAN: I would now like to call on Col. Riel S. Crandall, U. S. Military Academy, West Point, New York.

STATEMENT BY

COL. RIEL S. CRANDALL

UNITED STATES MILITARY ACADEMY

WEST POINT, NEW YORK

COL. CRANDALL: Mr. Secretary, conferees, ladies and gentlemen:

The United States Military Academy, in keeping with the Federal Water Quality Act passed in 1965 and Executive Order 11288, dated 2 July 1966, programmed construction of a secondary sewage treatment plant in FY 1968. Based on the design by Alexander Potter Associates, project cost was estimated at $2,137,000. Congress subsequently authorized and funded the project for this amount. On 7 June 1968, the Federal Water Pollution Control Administration approved the design as being "consistent with applicable Federal or State quality standards or other requirements."

Prior to receiving this approval, a revised project estimate was made placing the cost at $2,618,000 or more than 22 per cent above the amount funded. Policy specifically prohibits advertising any project for which the Current Working Estimate exceeds authorized funding. It was therefore necessary to reprogram this project and this was subsequently done for FY 1971.

On 23 May 1968 bids on four other projects at USMA were opened (The Academic Building, Thayer Road Bypass, the Cold Storage Plant, and the Expansion of Camp Buckner). The bids exceeded the estimated project cost for three of the four projects. It therefore became apparent that all of the projects authorized could not be constructed within the authorized funds. The Secretary of the Army notified the appropriate congressional committees and subsequently permission was received from these committees to apply the $2,137,000 (Secondary Sewage Authorization) to two of these projects and USMA was directed to reprogram or rejustify the remaining three projects.

At the present time, most of the nearby communities provide primary treatment and some have begun construction of secondary sewage treatment facilities. We now provide primary treatment, and the removals we obtain are roughly what we could expect from a well functioning primary sewage treatment plant. Construction of our proposed secondary sewage treatment plant could begin as early as the Fall of 1970, and it should be feasible to complete construction by the end of 1971. With this program we will meet previous commitments.

That is the end of the statement.

SECRETARY KLEIN: Fine.

Any questions, Mr. Sullivan?

MR. SULLIVAN: No.

SECRETARY KLEIN: Mr. Metzler?

MR. METZLER: Yes, I have a couple of questions here.

I am a little distressed. I recall the representation being made to Senator Javits' office, who is personally interested, that this plant got early attention. I am not in a position to evaluate the various priorities of projects, so we can only accept things the way they are today.

I don't understand why, if this was ready to go at the earlier date, you are delaying construction now until the Fall of 1970. Will you explain that?

COL. CRANDALL: Yes.

MR. METZLER: You said late 1970 or 1971. That was the time you gave?

COL. CRANDALL: Correct. As I stated, our standard policy in the Army is made on commitments through Congress. I don't know whether it is law or not which prohibits us from bidding if, at the time our final government estimate is made, we exceed the amount authorized by the Congress.

This became apparent before we bid this project, so we could not bid it. We had already opened bids on these other four. We returned the entire problem to Congress and got permission to go ahead with the Academic Building and a small portion of the Thayer Road Bypass, which is tied in physically with the Academic Building and the rest of the projects we were instructed to reprogram and resubmit to Congress, including the sewage plant.

By the time this decision was made and we could implement it, we were already to Congress with the 1969 program. The 1970 program had been prepared, and the nearest program we could get the sewage plant back into was the fiscal 1971 program, and this is where it is now, and the Department of the Army Review Board has informed us this past week that it has a very high priority right now.

MR. METZLER: Well, my other question then is we are aware of the escalation of costs for sewage treatment works, and we have enough money in the budget this time.

COL. CRANDALL: Yes, sir. I don't want to get caught this way again.

MR. METZLER: Thank you very much, Colonel.

SECRETARY KLEIN: All right. Mr. Klashman?

MR. KLASHMAN: I would now like to call on Mr. Robert Wuestefeld, Assistant Chief of Operations, New York District, Corps of Engineers.

STATEMENT BY

MR. ROBERT WUESTEFELD

ASSISTANT CHIEF OF OPERATIONS

NEW YORK DISTRICT

CORPS OF ENGINEERS

UNITED STATES ARMY

MR. WUESTEFELD: I am Robert Wuestefeld, Assistant Chief of Operations of the New York District, Corps of Engineers, U. S. Army. The New York District includes within its boundaries the watersheds of the Hudson River and the streams draining into the New York Harbor.

There are three general functions of the District which are pertinent to the problem of pollution of the Hudson River.

First, as you know, the Corps of Engineers is designated by law as the Federal agency responsible for water resource planning and for construction and operation of Federal works for navigation, flood protection and beach erosion purposes. As a result of many broad studies which the District has made of the watersheds of the Hudson and the New York Harbor, we have developed and have available for your use considerable water resource data.

In connection with sedimentation studies of the lower Hudson River, we have constructed a comprehensive model of the New York Harbor, including the Hudson River as far north as Hyde Park. The model has already been used for pollution distribution studies. The model is available for resource studies of the Hudson River and, if sufficient interest is generated by other agencies, consideration could be given to extending the model as far as the Federal dam at Troy, New York.

There are a number of studies and projects of the District which are closely related to the pollution problem. These are being coordinated with all local and Federal agencies who are working in the water resource field.

Under congressional authority, funds have been made available to the District for the collection and removal of drift. Several Corps of Engineers' vessels are used for this purpose. Most of the collection activity is in the upper bay of the harbor where drift collects from the contributing waterways.

Pursuant to a congressional resolution, the District has completed a study regarding the feasibility of eliminating the sources of drift and debris. The three primary sources are--loose material along the shores, dilapidated structures, and derelict vessels. We estimate there are about 29.2 million cubic feet of this material in the New York Harbor area.

A similar type of investigation is under way to determine the feasibility of eliminating sources of drift and debris from the entire Hudson River. This study is presently scheduled for completion in Fiscal Year 1972.

In addition, the North Atlantic Division, Corps of Engineers (our next higher headquarters) is currently conducting two studies of major significance in the matter of water pollution. The first of these is the North Atlantic Regional Water Resources Study covering all river basins draining into the Atlantic Ocean north of the Virginia-North Carolina State line, portions of Lake Champlain and the St. Lawrence River. This is one of the eighteen regions of the United States delineated in the Water Resources Council program of water resources studies covering the United States. The purpose of this study is to establish a framework, or broad master plan, to serve as a basis for the future multi-purpose water resource development in the area. This study, which is a joint effort of Federal agencies involved, is scheduled for completion in 1971.

As a result of the recent unprecedented water drought over the northeastern seaboard of the Nation and the resulting emergencies and restrictions concerning water supply and use, Congress has authorized the Corps of Engineers to cooperate with all Federal, State and local agencies in preparing plans to meet the long range water needs of the Northeastern United States. These plans may include major reservoirs, conveyance facilities to transfer water between river basins and purification facilities to be constructed under Federal auspices with non-Federal participation. The area covered by this study is generally similar to the area covered by the previously mentioned framework study. An interim report covering metropolitan New York area, northern New Jersey and Western Connecticut will be completed in calendar year 1971.

A second function of the District which relates to the water pollution problem is that of military construction at Army and Air Force Bases in the area.

At your conference of September 1965 you will remember that there was considerable discussion of pollution of the Hudson by Federal Installations. I am pleased to report significant progress at all Army and Air Force installations cited in your initial evaluation.

a. At the Troy Lock and Dam facility electric toilets have been installed which now incinerate waste material.

b. At the United States Military Academy at West Point plans have been completed for construction of secondary sewage treatment facilities at that location. It is anticipated that the project will be funded in the fall of 1970 and that a contract will be awarded for construction shortly thereafter. The estimated cost of this additional complex is in excess of $3,000,000.

c. At Watervliet Arsenal the construction of a complex industrial waste treatment facility has been substantially completed and is currently undergoing general tests for acceptance. The facility provides a treatment plant for highly toxic cyanide wastes so that the effluent will be of such quality as to permit discharge via the existing storm system into the Hudson River. In addition, the facility provides for a separate treatment plant for the soluble oils and acid wastes. Each of these wastes receives separate primary treatment prior to a combined secondary treatment so as to permit discharge into the Hudson River. The non-soluble oils are now collected and disposed by local forces. Sanitary wastes from this installation are disposed of by the City of Watervliet.

d. An addition to the existing sewage treatment plant at Stewart Air Force Base is presently under construction to provide additional secondary treatment of sanitary waste. Included in the project are additional sludge drying beds, sludge digester, and chlorine contact chamber addition. The contract was awarded 30 September 1968 in the amount of $188,800. It is anticipated that the construction will be completed by summer of 1969.

In addition, all self-propelled vessels that are operated by the New York District have been equipped with chlorinators, except one, which is being retired shortly.

The third function of the District pertinent to the water pollution problem is that of enforcement of certain Federal statutes developed to assure freedom of our waterways for navigation.

The most general law associated with pollution, enforced by the Corps of Engineers, is Section 13 of the River and Harbor Act of 3 March 1899, known as the "Refuse Act" which states, in essence, that it is unlawful to throw, discharge or deposit any refuse matter of any kind or description into navigable waters of the United States whereby navigation shall or may be impeded. In the broad sense water pollution is not unlawful, under this statute, unless it is injurious to navigation.

The "Refuse Act" and other anti-pollution laws is enforced in the New York Harbor area and in the Hudson River by the District Engineer in his dual capacity of Supervisor of New York. In this capacity the District Engineer plays an active part in the prevention of illegal deposit of materials in these waters and in the disposal of wastes in navigable waters.

The office of the Supervisor of New York Harbor was established by an Act of Congress approved June 29, 1888,to "prevent obstructive and injurious deposits within the harbor and adjacent waters of New York City, by dumping or otherwise, and to punish and prevent such offenses." To enforce the foregoing statutes the New York District maintains an inspection force who regularly patrol the harbor. The inspectors travel around the harbor by patrol craft and visit shore establishments on foot and by use of patrol cars. Inspectors are available day and night and are prepared to investigate untoward incidents as well as being on routine patrol.

When a violation is observed or reported, the violator is made aware of the law he has broken and given an opportunity to correct the condition if it is correctible. If the warning is not heeded and the violation is continued or repeated or if it is a flagrant violation in the first place, a complaint is filed with the appropriate United States Attorney or in the case of certain violators involving spills from vessels with the U. S. Department of Justice, Shipping and Admiralty Section.

Another phase of the Supervisor of New York Harbor activities involves the establishment of dumping grounds for the disposal of waste materials originating in or being transported over the waters under the jurisdiction of the Supervisor of New York Harbor. Disposal areas have been established in three major localities: Hudson River, Long Island Sound and the Atlantic Ocean off the entrance to New York Harbor. There have been nine areas established in past years in Hudson River between Peekskill and Kingston, New York. They have been used exclusively for the deposit of material dredged from the channels in Hudson and the local harbors along the river front north of Hastings-on-Hudson. A total of 19 areas have been established in Long Island Sound opposite the entrances to the many harbors along both shores of the sound. Although the areas are designated for the disposal of materials dredged from these local harbors and waterways, the area off Eaton's Neck has been used for the disposal of clean cellar dirt and wrecks, the latter particularly when inclement weather and rough seas made trips to sea too hazardous.

There are six separate dumping grounds designated in Atlantic Ocean from four to 106 nautical miles offshore using Ambrose Light as a point of reference. These areas provide for the disposal of mud and one-man stone, cellar dirt, sewer sludge, waste acid, wrecks and chemical (toxic) wastes.

While the principal criteria in the original selection of these areas was to assure that their use would not be detrimental to navigation, other factors were also considered. The sewage sludge dumping ground, in use since 1924, was selected to avoid offensive discoloration and solids washing up on the beaches. The waste acid dump was established in 1948 only after competent Federal and State agencies concurred that its use would not be likely to cause any injury or discoloration of the water along the beaches. The offshore chemical disposal area, which is off the Continental Shelf, has been designated for use in the disposal of industrial chemical wastes which various State and Federal agencies felt would be injurious if they were not carried beyond the continental limits.

Requests for permission to dispose of industrial chemical wastes at sea have increased ever since health authorities have barred the use of upland disposal sites or internal streams because of possible infiltration into potable ground water aquifers. Each such request for approval is carefully reviewed and the views of concerned Federal and State agencies are secured, including the New Jersey and New York State Conservation and Health Departments, the Interstate Sanitation Commission, the U. S. Public Health Service, and the Fish and Wildlife Service and the Federal Water Pollution Control Administration of the U. S. Department of the Interior.

To assure that the waste materials are disposed of in the approved dumping grounds, permits are issued for the vessels transporting the materials to move over the waters of New York Harbor and its adjacent and tributary waters to the designated place of disposal. Inspections are made by use of patrol boats patrolling the dumping areas being used regularly and by inspectors riding the vessels transporting the materials on individual trips or occasions. In addition, the vessel operators are required to return the permits with the certification of the master of the vessel as to the action taken in dumping the material. As a result of these efforts, the dumping of wastes or other material is documented and regulated.

With this increased activity and the interest expressed by many agencies and organizations concerned in water quality and pollution, the Corps of Engineers has become increasingly concerned in the environmental impact of the dumping procedures being followed. Many of the dumping grounds have been used for many years, but there is little knowledge available as to the effect of their use on the total environment. Periodic surveys have been made which determined that the dump areas have not shoaled appreciably. On the other hand, there have been no specific objections to the dumping grounds or the procedures followed in using them.

The Corps of Engineers being charged with the responsibility of establishing and maintaining waste disposal areas in coastal waters has the concurrent duty of determining what effect such disposal has on the total environment. The Chief of Engineers, U. S. Army, directed that a study be made of dumping grounds in the coastal areas receiving various types of waste so as to:

1. Determine the effects of such dumping;
2. Make changes in areas or procedures to eliminate harmful effects or to enhance beneficial effects; and,
3. Determine the effects which might be expected from various types of waste materials.

It was decided that the initial research project should be undertaken in relation to the New York Coastal area. The work was assigned to the Coastal

Engineering Research Center (CERC) of the Army Corps of Engineers with headquarters at Washington, D.C. This organization was directed to supervise the project, calling upon the New York District and other agencies to perform much of the actual field work required for the program. It was determined that the field work would be performed over a period of two years and that a final report with recommendations would be completed not later than one year thereafter.

The Sandy Hook Marine Laboratory of the U. S. Bureau of Sport Fisheries and Wildlife was commissioned to undertake studies of the mud, cellar dirt, and sewer sludge dump grounds.

The primary objectives of the field study being undertaken by the Marine Laboratory, are to:

1. Determine the effects of past and future deposition of dredge spoil--

SECRETARY KLEIN: Mr. Wuestefeld, the Bureau of Fish and Wildlife are here to testify. Would you leave that for them, please?

MR. WUESTEFELD: Very well. Of course, you understand, Mr. Klein, this is a study that the Corps is making.

SECRETARY KLEIN: I understand that, but they are here to testify on it.

MR. WUESTEFELD: Very well.

SECRETARY KLEIN: Go ahead. They can cut that out of their statement then if you are prepared.

MR. WUESTEFELD: I would rather not have duplication.

SECRETARY KLEIN: You go ahead, and they have time to do the cutting, so you go right ahead.

MR. WUESTEFELD: All right. The primary objectives of the field study being undertaken by the Marine Laboratory are to:

1. Determine the effects of past and future deposition of dredge spoil and other loose waste sediment on the biology of benthic zooplankton and fish population living in the designated dumping areas;

2. Determine the hydrography of water masses which impinge upon or are over the dumping area; and

3. Evaluate the effects of such water movements on the disposal of solid wastes.

The initial biological research program will be concerned with determining the extent of area in which sea life has been affected by dumping of dredged materials and sewage wastes.

In addition, the effects of solid and toxic wastes on phyto- and zooplankton will be studied in the field and in the laboratory. Samples taken at different depths and distances from dumping vessels will be analyzed for immediate deleterious effects. Long-term effects will be investigated at the Sandy Hook Laboratory controlled environment aquarium facility.

In addition to the foregoing studies on the effects on plant and animal life, it is also planned to conduct research on water transport and diffusion. This would involve placing thermographs at strategic locations between Fire Island, New York and Barnegat, New Jersey. Data from this equipment will be collected periodically by divers, operating from Marine Laboratory vessels. These vessels will also determine vertical stratification of such variables as temperature, salinity, density and bottom currents. Wind force and direction data will also be collected from appropriate weather stations. From a correlation and analysis of these data, it is anticipated that predictions will be made of water movements along the bottom in the New York Bight.

An additional research program in the New York Bight has been recently commenced by the newly established Marine Sciences Research Center of the State University of New York at Stony Brook, Long Island, New York. Under this program, the Marine Science Research Center obtains bottom samples and biological data either by their own efforts or from the organizations performing simultaneous studies for other purposes. The analysis of the samples would determine grain size, water content, grain density, carbon contents and mineral composition of the grain. The wastes would then be compared with natural sediments and characterized as to source and as to the residual after dumping and deposition on the ocean floor. An ultimate goal of these studies is the development of guidelines for solid waste management in the marine waters so that there can be a beneficial use of the wastes.

The testing program by the Sandy Hook Marine Laboratory was commenced in August 1968. Initial testing is being limited to the Sewage Sludge Dumping Ground. Incomplete tests confirm results of previous studies which revealed sludge deposits lying on the bottom in an area 20 to 25 square miles in extent, roughly centered on the designated dump site. Analysis of cores show that at the center of the deposit area, sludges have accumulated or have been worked into the sediments to a depth of one to three feet. Preliminary analysis of sediments indicates a relatively high content of iron and chromium in sediments of certain samples from the sludge disposal area. Additional testing is being undertaken to determine if these metal deposits are distributed throughout the area or are isolated or localized conditions. Further testing is required including testing of wastes collected at their source rather than at the disposal site, before any changes should be made in the pattern of dumping of sludge containing industrial wastes.

It is believed that completion of these testing programs will take the guesswork out of the question as to the effect of dumping on the environment. Until such time as other means are found to dispose of our wastes, which are within our economic means and are a better solution to dumping at sea, it appears that such dumping will have to be continued. Full evaluation of the results of the investigations should tell whether ocean disposal is good, bad, or immaterial and whether or not alternatives, either in location or procedures should be adopted.

Departing from what I said, I just want to add that only recently the Coastal Engineering Organization in Washington has decided to convene a panel of experts who are going to review completely the program of work being done by the Marine Laboratory and determine what further steps should be taken to make the study more complete.

Thank you.

SECRETARY KLEIN: I have a series of questions on these dredgings.

You said at one time, if I remember right, that besides cellar items going in there, acid bearing materials were being dumped four to six miles out?

MR. WUESTEFELD: No, sir.

SECRETARY KLEIN: This was in your statement. I picked it up. If I had been asleep, it would have awakened me, but I wasn't asleep at the time. You said acid bearing materials four to six miles out.

MR. WUESTEFELD: It is 106, beyond the Continental Shelf. The chemical wastes go out off the Continental Shelf where it is one thousand fathoms or more deep.

SECRETARY KLEIN: Have you been making any tests at all of what is on the barges or ships that you take out there as to what the chemical content is?

MR. WUESTEFELD: No, we have not. We have taken chemical analyses furnished by the companies disposing of the wastes.

SECRETARY KLEIN: You have no corroborative evidence whatsoever?

MR. WUESTEFELD: No, sir.

SECRETARY KLEIN: Now, I heard you say that we are having chromium on the bottom 12 miles out in the dumping grounds.

MR. WUESTEFELD: In the sewage disposal areas there has been some indication of chromium in the residue lying in the bottom of the sludge disposal area.

There have not been sufficient samples taken to be sure that it is widespread throughout the entire area or whether it may just be isolated spots. It is possible that the chromium and iron are from the industrial wastes rather than ordinary sewage collection, because both industrial wastes and the sewage sludge go to the same dumping ground at the present time.

SECRETARY KLEIN: One of the things we have done in Lake Michigan, of course, is require a coring sample or several of them to be tested before anything will be allowed to be dumped.

Of course, we don't allow any dumping in the Chicago area.

It is possible here that maybe it would be better to get some corroborative evidence, that perhaps you are not getting a full factual statement as to what is in the dredgings that you are dumping. If I may, I would recommend that at least helter-skelter samples be taken so that nobody would know when you are going to take one to make sure that these would be nontoxics if you are going to dump them within the Continental Shelf twelve miles out.

MR. WUESTEFELD: We have discussed this since we have discovered there is chromium in it, and it is a feeling that they are possibly from the industrial wastes, and while it may have been only a couple of scattered loads, it may be throughout the area.

There is additional sampling being taken. These are actually core samples of the sediments which are being analyzed right now for us by Stony Brook.

SECRETARY KLEIN: I see.

MR. WUESTEFELD: If we find that this material is scattered throughout the entire area and it is not just one of these rare things that happen, we will then expect that we are going to take samples from all of the sources of the sludge or industrial wastes to determine which one is the one that is bringing to us the metallic wastes which we don't want.

SECRETARY KLEIN: Now, we have been dumping the sludge out there 12 miles out. About how high a mount have you made from the original sea bottom?

MR. WUESTEFELD: The soundings we have taken have shown very little change in the bottom.

SECRETARY KLEIN: You mean you have not decreased it by five or ten feet in that area?

MR. WUESTEFELD: No, sir.

If it is part of the sewer sludge, it does not all stay there. It is only a small portion that stays. In fact, the core soundings indicate that there is only one to three feet of material in the entire area.

SECRETARY KLEIN: What does it do, get taken up by the chlorides in the ocean?

MR. WUESTEFELD: That's right. A large

part of it just completely burns itself out and disappears.

SECRETARY KLEIN: I might say at this time to the assemblage here that the Department of the Interior has its own study--I think most people here know it--going on onthe disposal of wastes along the coastal areas of the country, not just in this area, and is expected to come up with a final answer at a later date. There will be some reference made to it later in the day.

So the problem is being attacked on more than one front.

MR. WUESTEFELD: Well, on the Pacific there is also a study for the United States Department of Health, and they have been in touch with us, so there are three agencies.

SECRETARY KLEIN: Mr. Sullivan?

MR. SULLIVAN: I wonder if the effect of sludge dumping 12 miles off the coast would include any possible deleterious effects upon the beaches, and not just limit itself to harmful effects on the marine biology.

MR. WUESTEFELD: The study we are making is to determine whether any adverse effects come up on the beach.

All the studies that have been made so far have not shown that any of the sewer material dumped at the dumping grounds have come up on the beaches. The most recent one was by the United States Public Health Service, where they found no evidences of any of the pollution, BOD demand or anything, more than five miles from the center of the dumping ground, and since it is ten miles offshore we don't think that anything that has been reported coming on the beach has actually come from the sewage dumping ground.

MR. SULLIVAN: Does the Corps have any plans to make any evaluations of the possible harmful effects of dumping a variety of industrial wastes at the 100 mile site?

MR. WUESTEFELD: No, at the present time we do not. Material going out there off the Continental Shelf that way is being permitted at the present time after we have consulted all the State and Federal agencies, and there is no contemplation right now of making any study of that by us.

Our studies have been confined to those which are in reasonable proximity to the shoreline.

MR. SULLIVAN: Can I reasonably read your testimony to say that you don't intend to change the conditions under which you now issue permits for barging in the City pending whatever comes out of this 12-mile study?

MR. WUESTEFELD: That is correct.

MR. SULLIVAN: I wonder if you could give us an assessment of the prospects of this rather ambitious debris clearing project? The Corps held hearings on it some months ago for waterways in general in this metropolitan area.

MR. WUESTEFELD: Well, as a result of the hearings we held in Newark and in New York, the report of the District Engineer has been revised to incorporate all the additional data, and the report is now completed by the District Engineer.

Assuming, for the moment, things will go along and that it would be accepted favorably through the Division office, the Chief Engineer and up into Congress, it might take possibly eight or ten years actually before work would begin. We don't think it would be in the immediate future.

MR. SULLIVAN: Is there any possibility that the Corps would provide for the lower Passaic and lower Hackensack the kind of routine cleaning that it does of the Hudson River?

MR. WUESTEFELD: Right now, as far as the routine cleaning, we have two projects. One is for the collection and removal of drift in New York Harbor, and that is the only one where we are working routinely on it.

If we are going to clean up in any of the other waterways, it will have to be by special additional authorizations.

MR. SULLIVAN: Well, I distinguish between the junk that litters along the Passaic, and, from the looks of it, has for many decades, and the material that is floating around that might conceivably interfere with navigation.

Do you need the same kind of long time consideration to handle the stuff that is drifting around as well?

MR. WUESTEFELD: As a matter of fact, when you come to New York Harbor, most of the material originated either by trees falling in or debris from piers, or just the material that is thrown over the bank and is floating.

It all seems to end up somewhere off the

Narrows, so we don't have to go throughout the entire harbor to get the material. By confining the available equipment and by just working right there, we get almost all of it.

We have, as a matter of fact, gone up into the Passaic River a number of times and cleaned up in there, with the request to the local interests that they would try to stop the material being dumped on the bank once we have cleaned up the river.

We have cleaned up the river several times, but that is where it ends right now. The material is still there on the banks and it is growing.

MR. SULLIVAN: From the looks of the lower Passaic now, in terms of sunken barges and trucks lying ontheir backs with the wheels sticking out and so on, it makes it appear that it is a river that really ought to be dirty and that it would be inconsistent for the water to be clean. I am a bureaucrat, and I ask this question from that point of view:

I wonder if there is any possibility that steps could be taken with relation to this aspect of pollution in the less than eight or ten years?

MR. WUESTEFELD: Unfortunately, that is as long as it will take.

We only remove those things which are a definite menace to navigation. The other things disturb the esthetics, which we are not authorized to do, even those that are up in the shallow waters, unless they actually affect navigation.

SECRETARY KLEIN: Mr. Wuestefeld, if I may interject, with reference to the Sanitary and Ship Canal in the Chicago River and the Calumet River and the like, the metropolitan district of Chicago does its own cleanup unless it is a menace to navigation, in which case it calls upon the Corps of Engineers there.

I might then go to Mr. Sullivan and ask him: Isn't the Passaic Valley Sewerage Commissioners charged with the duty of removing these barges and trucks and so on? This is what they do in Chicago. The Sanitary District does this, and it would appear to me that the same duty would apply to Passaic Valley over here, that they can't pass their job over to the Corps of Engineers.

MR. SULLIVAN: Well, do I understand your first question is that this is within the scope of the jurisdiction of the Passaic Valley Sewerage Commissioners?

SECRETARY KLEIN: Yes, it is.

MR. SULLIVAN: As I understand the project that is being offered by the Corps, on which they held public hearings, it would not be exclusively a Federal project but would be funded by State and local governments as well.

I would like to think that our own State government would contribute whatever resources are necessary to make the project a reality.

MR. WUESTEFELD: As a matter of fact, the State of New Jersey has offered its full cooperation in the project to us.

Of course, our project is a one-shot deal of cleaning it up, and with the assurances then from the States of New York and New Jersey that they would either adopt sufficient legislation or ordinances to keep it clean thereafter.

MR. SULLIVAN: Some of these things that need to be cleaned were in the Passaic River when Charles Dickens was alive. I think if it could be cleaned up now, we should keep it that way thereafter.

I have just one additional question: You mentioned a policy committee that is being formed to guide in this study. I wonder if that policy committee includes people whose professional specialization is water pollution control?

MR. WUESTEFELD: As a matter of fact, in commencing our work, we had the Smithsonian Institute call a meeting last year before we even started. They recommended people to help us to devise a program.

Our present convening another board will be with the Smithsonian Institute making the recommendations and getting the best experts in whatever agency they are to help us in evaluating the program.

MR. SULLIVAN: Thank you, Mr. Chairman.

SECRETARY KLEIN: Yes.

Mr. Metzler?

MR. METZLER: I have no additional questions.

SECRETARY KLEIN: Mr. Glenn?

MR. GLENN: Frankly, from what Mr. Sullivan said maybe the Smithsonian Institute is the proper organization to look into this matter.

MR. WUESTEFELD: No comment.

SECRETARY KLEIN: I just think that if this is in the jurisdiction of the Passaic Valley Sewerage Commissioners, they should go out and clean this up themselves instead of always trying to pass it off.

What these local groups should do, instead of passing it off to the State or Federal Government is this. As a matter of fact, in some of the areas I have seen the citizenry go out and do this, but I see no reason why the Passaic Valley doesn't get out and clean up its own river if that is what they are supposed to do and if they have the jurisdiction for it.

MR. WUESTEFELD: We have encouraged as much as possible local authorities to help in the clean-up.

SECRETARY KLEIN: If we try to clean up all the rivers with the Corps of Engineers and FWPCA, there is no need for having local governments, and I think this is the wrong answer. I think the local governments should do this themselves.

This industrial waste item bothers me terrifically. I know what Secretary Hickel thinks of it. I would like to know why there has to be dumping of industrial wastes, and why we don't have the companies take care of these items themselves, completely taking care of, first of all, water pollution abatement, and, second, their own solid waste disposal?

MR. WUESTEFELD: Well, with reference to the particular industrial wastes we are speaking of here that we have found detrimental in the sewage sludge dumping grounds, some of the sewage treatment authorities, like, for example, the Middlesex County Sewage Treatment Authority, take into their plant the effluent from industry, so that they are getting industrial wastes into it. There are others also.

The City of New York, of course, is primarily sanitary sewage, but there are certain industrial wastes.

SECRETARY KLEIN: They are not taking up directly from industries and dumping out there with stuff like our pickling liquors, cyanide and the like?

MR. WUESTEFELD: No. The material they are taking in at the plant has been assimilated.

SECRETARY KLEIN: I mean even at the 106 mile dump.

MR. WUESTEFELD: The 106 mile dump is a case of using that when probably all other efforts have been used.

SECRETARY KLEIN: But are you picking up straight industrial wastes and dumping them at this point?

MR. WUESTEFELD: That is correct.

SECRETARY KLEIN: And they do have items such as cyanide in them?

MR. WUESTEFELD: On occasion, yes.

SECRETARY KLEIN: Thank you. Are there any further questions? Mr. Klashman?

MR. KLASHMAN: I would like to ask a couple of questions, Mr. Klein.

Mr. Wuestefeld, I wonder if for the record you could furnish us the exact locations of the six dumping grounds. I would like to get into the record the exact locations, and also the tonnages and volumes that have been dumped in the last couple of years.

MR. WUESTEFELD: I could make that readily available.

MR. KLASHMAN: Could you give it to us for the record, please?

MR. WUESTEFELD: I will have it prepared and have it here tomorrow.

SECRETARY KLEIN: We will be glad to add it to the record.

MR. KLASHMAN: There is one other question, Mr. Wuestefeld.

Mr. Klein was asking some questions about the disposal of solid wastes. We have had an inquiry from the Philadelphia District about the dumping of solid wastes from Philadelphia, and, more recently and formally, we have had an inquiry from one of the New York City tugboat operators, which indicates that they are contemplating baling and taking solid wastes off the shore.

Have you been approached on this? Can you give us any information on what this proposal involves?

MR. WUESTEFELD: We have been approached. I might start off by saying that.

One of the towing companies, for example, did obtain several samples of bales of wastes. These wastes were compressed so that the bale would have a specific weight of somewhere between 70 and 105 pounds per cubic foot. They would guarantee they would weigh that much so that they would sink.

The bales that we were furnished as samples weighed in the neighborhood of close to two tons. One was kept in Kill Van Kull where they wanted to see what would happen. The other we furnished to the Sandy Hook Marine Lab to test, and after a period of time they disappeared.

However, that was due to a bad storm. Before it disappeared, it was found that there was fish life apparently coming close to the one and possibly feeding off it.

The suggestion has been made, though, that as an overall proposition, the waste material could be baled that way and taken out to an offshore dump. In fact, we have a request now from the State of New York Pure Waters--I have the wrong title, Mr. Metzler.

MR. METZLER: Pure Waters Authority.

MR. WUESTEFELD: It is part of the State agency, and they have asked us would we please call a meeting of various interested agencies, and certainly we will include the Federal Water Pollution Control Administration, to sit down and discuss the pros and cons of using offshore dumping of baled wastes, rather than using it as sanitary landfill or attempting to incinerate it.

MR. KLASHMAN: Mr. Wuestefeld, do I understand correctly, then, what you are talking about is a possibility of all the solid wastes from all the coastal cities and perhaps some of the inland cities being hauled, being put in two thousand pound bales with a 70-pound density, and being hauled out somewhere in the vicinity of the Continental Shelf? Is that what is being proposed?

MR. WUESTEFELD: That is one of the thoughts being proposed. In other words, they have attempted, for example, to bring us to the mines to fill in the mines, or even strip mines or in the deep mines. They have also studied the incineration, and one of the possible ways of doing it that they have come up with is the idea of baling it, and if it would not be harmful, it might be found to be beneficial.

MR. KLASHMAN: Do we have any idea of what tonnage we are talking about?

Let's just stick to my own region. I mean, what frightens me is if we start talking about New York City, Boston, Providence, Philadelphia, the tonnages must be tremendous.

MR. WUESTEFELD: They are.

MR. KLASHMAN: Do you have any estimate at all of what tonnages we are talking about?

MR. WUESTEFELD: I would hesitate to put a number on it now.

MR. KLASHMAN: Do you have any way of getting any of these figures, because if you do, I think it would be very valuable for us to have.

MR. WUESTEFELD: I will have what I have in the office on it. I do have a copy of a proposal that was made for Philadelphia. I saw it just in passing interest.

MR. STEIN: Let's see if I understand the proposition correctly.

The proposition is that solid wastes from the big cities along the Atlantic Coast, or, at least, the northeast, could be put in bales, that these could be hauled to a dumping ground, and we have the notion that it would not be harmful but it might be beneficial?

MR. WUESTEFELD: It is conceivable it could be beneficial, that's right.

SECRETARY KLEIN: Could we have the amount of tonnages for Philadelphia, please?

MR. WUESTEFELD: I don't have anything with me.

SECRETARY KLEIN: I thought maybe you could give us this off the top of your head.

MR. WUESTEFELD: No. It is just something I received just as information in passing, and, being more concerned with New York, I'm afraid I don't recall the numbers.

MR. STEIN: May I ask you about Long Island? What do you do with the material you get out of the harbors in Long Island Sound that you mentioned?

MR. WUESTEFELD: At the present time we have several projects along the north shore of Long Island, and, of course, there are projects along the north on the mainland side.

The material that is dredged from the channels is dumped in the deep areas which have been established for many years in Long Island Sound.

MR. STEIN: Right in the Sound?

What does the material consist of that you are getting from the harbors?

MR. WUESTEFELD: Mostly it is mud and silt.

MR. STEIN: But you have not had any core analysis of that to see if you are getting any toxic materials, and what you do is pick it up and dump it back into the sound?

MR. WUESTEFELD: Well, basically, it is silt that is accumulated in the harbor, and we just move it from there.

MR. STEIN: You know, we have been dumping in Mr. Klein's region.

Where you talk about the silt I remember we had silt from one of the harbors in the Great Lakes, and they said 80 per cent of the wastes was just silt and they were putting it on the bottom. When we analyzed that, you would be shocked at what was in the other 20 per cent.

It is almost like a fertilizer, you know. The silt and the inert material is a carrier and it can be very powerful.

Again, as I understand the problem, what we are doing is we are taking the material when we dredge the harbors in Long Island Sound from the harbors and putting it right out into the Sound?

MR. WUESTEFELD: That is correct.

MR. STEIN: All right; thank you.

SECRETARY KLEIN: Mr. Sullivan?

MR. SULLIVAN: One minor addition to a question asked by the Chairman.

On the quantity we are talking about here, on solid wastes our residents in New Jersey produce 35,000 tons a day.

SECRETARY KLEIN: Do you want to put all of that in the ocean?

MR. SULLIVAN: I hope you are not addressing that question to me.

SECRETARY KLEIN: Yes. Do you want to put all of that in the ocean?

MR. SULLIVAN: We are not sure we want to put even one bale in the ocean.

SECRETARY KLEIN: Thank you. That's the best answer I have had in a long time.

You will probably get a complimentary answer from Secretary Hickel because he feels the same way you do.

MR. STEIN: I would like to say just one more thing.

When we went out into the midwest, we found all the cities, as Mr. Metzler knows, putting their trash and refuse into the Mississippi and Missouri Rivers.

As a matter of fact, let me give you the figures with reference to St. Louis. I still remember them. They were putting 300 tons of garbage and refuse, after grinding it up, into the Mississippi every day.

We proceeded under the notion, at least in that place, that it would not be beneficial and we had this stopped. This will give you an idea of the magnitude of the problem in a City the size of St. Louis, and what kind and quantity of material we are talking about, MR. WUESTEFELD: I just want to point one thing out about this ocean disposal of garbage and waste.

I get this question asked of me quite frequently. In fact, this morning coming to work it was mentioned about garbage coming in on the shore.

It is true that in the early 1900's there was actually a garbage disposal ground offshore, so that from New York City they would load the material and take it out to sea and dump it, but that stopped in 1932. There was a Supreme Court stipulation which prohibited any more garbage being taken to sea.

We discontinued the disposal area. We have not issued a permit for it since 1934, so that whenever people speak of garbage coming up on the Jersey beaches, at least it is not coming up from any legal disposal of it.

Actually, once a ship has left New York Harbor and gotten out into deep sea, we have no control over what they are doing, and if it is a large ship there can be a lot of wastes coming from that ship.

However, at least as far as materials coming from New York, there is no more going out to sea. It is all going into either incinerators and then the incinerated wastes are put into a landfill, or the raw wastes are dumped in a landfill, but since 1934 no more has legally gone to sea.

SECRETARY KLEIN: Fine.

Thank you very much. Mr. Klashman?

MR. KLASHMAN: Mr. Wuestefeld, in the discussion of the Federal installations, there was this discussion about the facility at Bayonne, and the question came up about the secondary treatment being provided by the Department of Defense installation or hooking into the Bayonne plant, and both things were being considered.

Can you comment on this further?

MR. WUESTEFELD: I was hoping you wouldn't remember that.

I could not comment on it.

MR. KLASHMAN: Could you get any information for us for the record?

MR. WUESTEFELD: I can get you information. I am not sure whether it is in our office or whether it is the Army transportation people handling it themselves. I would have to verify that.

MR. KLASHMAN: Can you get the information for us?

MR. WUESTEFELD: One way or the other, I will get it for you.

MR. KLASHMAN: If we could have that for the record, we would appreciate it.

SECRETARY KLEIN: It will be admitted into the record when Mr. Wuestefeld furnishes it.

MR. WUESTEFELD: Fine.

SECRETARY KLEIN: If I may say so, to cover this we still have a statement by the Bureau of Sport Fisheries.

Do you have any idea how long that is, Mr. Klashman, because Dr. Eisenbud wants to speak because he can't be here this afternoon.

MR. KLASHMAN: Mr. Schroder, do I understand that you are just going to submit your report for the record?

MR. SCHRODER: I can do it that way.

MR. KLASHMAN: It is up to you.

SECRETARY KLEIN: I think we would rather listen to it because it all ties in now with what has been going on.

I would just like to know how long it is.

MR. SCHRODER: I can complete it all in

less than ten minutes.

SECRETARY KLEIN: If the assemblage would stay with us on this, we will be able to complete at just about 12:30 for lunch.

In the interests of continuity, I think we should hear from the Bureau of Sports Fisheries and then request Dr. Eisenbud to make his presentation, and then break for lunch. Mr. Klashman?

MR. KLASHMAN: Mr. Thomas A. Schroder, Deputy Director of the Bureau of Sports Fisheries, Northeast Region.

STATEMENT BY
MR. THOMAS A. SCHRODER
ASSISTANT REGIONAL DIRECTOR
NORTHEAST REGION
BUREAU OF SPORT FISHERIES AND WILDLIFE

MR. SCHRODER: My name is Thomas A. Schroder. I am Assistant Regional Director of the Northeast Region of the Bureau of Sport Fisheries and Wildlife.

Because of the previous speaker having touched on some matters, I am going to delete from my written presentation some items in this paper and touch only on what we consider to be some of the values which would be associated with the cleaning up of the Hudson River.

This statement represents the views of both the Bureau of Sport Fisheries and Wildlife and the Bureau of Commercial Fisheries, which together make up the Fish and Wildlife Service of the Department of the Interior.

We are pleased to have this opportunity to speak at this conference. Unfortunately, I cannot report that the depressing effects of pollution upon the fish and wildlife resources of the Hudson River have been eliminated, or even reduced significantly. We still have a long way to go. I am optimistic, though, because we, supported by the general public, are now actively seeking ways to reduce pollution.

In 1965, Mr. Abelson mentioned that, "The use of streams for waste disposal is a single-purpose use. We no longer can afford such luxury." This statement is still true. Pollution in the Hudson River still limits both commercial and sport fishing and other uses.

In 1967 the commercial fish catch was 2,600,000 pounds. I do not know if this yield is representative of the potential commercial yield of the Hudson

River or not, but I believe that the potential certainly exceeds the commercial catch of the last few years. In 1964, the total commercial catch was 275,000 pounds--the poorest ever recorded to that time. The 1967 catch was only 163,000 pounds.

In 1968, the commercial catch increased to 199,000 pounds. Since the increase was due to a greater catch of American shad, which is known to fluctuate normally, the 1968 increase probably does not signify an environmental improvement.

Unfortunately, I again have to report to this conference that the striped bass, taken by sport and commercial fishermen, still have an oily "tainted" flavor due to pollution. The Long Island price for striped bass is 18-22 cents per pound; for Hudson River bass, only 7-8 cents per pound. In 1968 there were only four full-time commercial fishermen on the Hudson; in addition, 69 fished part time.

Turning to the sport aspect, the capability of the fishery to provide opportunities for recreational fishing is far greater than the current utilization, even though this use has expanded somewhat during the last few years. This expansion is probably due to the increasing public interest in the river rather than to a noticeable decrease in pollution. The psychological impact of pollution limits sport fishing use even when habitat conditions still permit survival of game fish in abundance.

The potential of the river for sport fishing is tremendous. For example, there are about 35,000 acres of surface water between the southern boundary of Westchester County and Poughkeepsie; this is only part of the surface area of the River. If we assume a conservative potential fishing pressure of 25 man-days per acre per year, this reach should support 875,000 man-days of sport fishing. At a rate of $1.50/man-day, the annual value would be $1.3 million. If we can develop this level of fishing use, it would make quite a contribution towards satisfying recreational needs. To achieve this, pollution abatement and more public access will be required.

In fact, we hope that when we are successful in restoring attractive sport fishing opportunities in the river, many people who are not now interested in fishing will become encouraged to take up this wholesome, leisure time activity.

Early control of pollution will hasten

full realization of the fish and wildlife potential of the stream. The river lies within easy reach of highly-populated urban areas. By the year 2000, we expect that hundreds of thousands more fishermen and many thousands more hunters will live in this area. Fishing and hunting places for these people will be in critically short supply. Cleaning up pollution is the key to providing attractive fishing and hunting opportunities in areas now offering no recreation. The need for commercial fish products will be more strongly felt in the future. Pollution abatement will certainly improve the Hudson River commercial fishery which has ready access to a large market. The goal of the pollution abatement program should be to restore the entire river to a quality level suitable for a wide range of uses including fishing and hunting. We are convinced that the necessary control of pollution will yield substantial benefits from sport fishing and hunting, commercial fishing, and many other uses.

The continued reduction in our water-related resources, together with the commercial and recreational values they support, can be reversed. To accomplish this will require complete cooperation among all levels of government and industry directed towards a cleaner Hudson River.

Can we afford to wait until the fisherman hangs up his rod or puts away his net? I think not. Efforts to eliminate pollution in the Hudson should be stepped up, now, to the level of an all-out campaign. Success will not be inexpensive--but it will be worth the cost.

SECRETARY KLEIN: Thank you.

One of the things that both the Secretary and I understand is that when we go into this question of what things are worth, we should consider items such as the ecological and social benefits of everything as well as the actual industrial and municipal benefits.

I have heard this figure of a dollar and-a-half per man-day, and I think your figures are much too low because I can't see any fishermen going out and just spending a dollar and-a-half per fish. It costs a great deal more than that.

I think maybe your Bureau should go back over and check that, because when we are talking about this and you come up with a dollar and-a-half in these days of inflation, you are not doing us much good on the fight against pollution.

MR. SCHRODER: Well, I don't know that this is the place to get into a discussion about this, but I certainly agree with you that the values are much higher, and if I can ad lib here for a minute or two with your permission, I thought of this as I was sitting in the audience.

Our Bureau has this year been attempting to inaugurate an urban fishing program for the disadvantaged groups in some of our large urban areas.

Now, I know that when I go fishing, it costs me perhaps $30 or $40 a day to do some fishing, and I know that there are those who spend as much as several hundreds of dollars a day for certain kinds of fishing, and I doubt very much that even these people who are spending the hundreds of dollars a day for their fishing get any more enjoyment than some small kid does out of going down to the creek and catching a little fish.

In New York City and in the other urban cities, they could well use an urban fishing program to give these kids some alternatives to hanging around on the City streets. If their rivers were cleaned up, they would have a place for these kids to fish.

I think one of the tremendous advantages of this pollution abatement program that we are embarked on is that it will make fishing available to people where they are, and perhaps these kids could then go down and do it for this dollar and-a-half.

SECRETARY KLEIN: Maybe they can, but the rest of us spend a great deal more than that. You and I know it.

In Illinois last year the Illinois Retail Merchants Association, besides the general proposition of supporting their bond issue out there, came out on the basis that it was well worth every sporting goods store and fishing man to get out and support this because of the increased impact on sales that it would have, besides the general basis of it. They were basing it on much more than a dollar and-a-half per man day.

That is why I come back to you on it.

MR. SCHRODER: I appreciate the problems involved.

SECRETARY KLEIN: We think that your item is worth much more than a dollar and-a-half.

MR. SCHRODER: We do, too. We just can't persuade economists of that fact.

SECRETARY KLEIN: Let's work on it.

Mr. Sullivan?

MR. SULLIVAN: No questions.

SECRETARY KLEIN: Mr.Metzler?

MR. METZLER: Well, I find myself in complete agreement with the philosophy expressed here.

I am wondering what kind of action kickers you have to give us some support. We are waging an all-out war right now on the Hudson, and when you say this ought to be stepped up, how can you help us?

MR. SCHRODER: Well, the Bureau of Sport Fisheries and Wildlife, of course, is not the agency that is responsible for the financing of water pollution control.

Our point in appearing here was to add some evidence that there were some other values in this, other than just the commonly accepted notion that clean water is a good thing.

We think there are some hard dollar-and-cents values to the fishing that this would provide.

MR. METZLER: Certainly we would not have any disagreement with that and we welcome this kind of support. But the experience, of course, is that moving these projects requires a great deal of education of local officials, be they industrialists or public elected officials.

As I said, I think we have an all-out war going here, but if there are any additional troops you can put into the battle, we are anxious to see it.

MR. SCHRODER: I think one of the reasons that a good deal of the legislation and support for appropriations has been evidenced in the past few years has come from the vociferous support of the sport fishermen fraternity of the United States.

They appear in great numbers at the polls and are very effective in their lobbying for many of these appropriation items. I would hope that some of the groups in the New York City area who have are effective and will lend their support to the appropriations for cleaning up the Hudson River.

I am not unmindful of the fact that one of the activities that I have been involved in for the past three or four years is the investigation of the effects of the Storm King Project on the bass in the Hudson River, and the effects of the atomic reactor at Indian Point on the anadromous fish in the Hudson River.

These things aren't going to have any effect because if the pollution isn't cleaned up, there aren't going to be any anadromous fish to get up the Hudson.

I am sure the sport fishermen understand this and they are supporting the pollution efforts.

MR. METZLER: I am fairly close to this, and they are much more effective in supporting the efforts at the congressional level and the State level.

I think we need a great deal more influence from these sportsmen in supporting the Mayors and the local officials who have to take the criticism from their constituents about taxes, and if there is any word you can give them, it is to get a lot more active locally.

MR. SCHRODER: We are doing our best.

MR. METZLER: That is very good.

SECRETARY KLEIN: I would just say to you, Mr. Metzler, that the most vociferous voice I have found in Illinois and anyplace else is the League of Women Voters. They are out all the time. In 22 hearings I had all over the State of Illinois a year ago, they only missed one, and they had a presentation every time.

MR. METZLER: The Illinois League is very effective, and I will put up the New York League against it any time.

SECRETARY KLEIN: That is true all over.

Are there any other questions?

Mr. Klashman?

MR. KLASHMAN: No, sir.

SECRETARY KLEIN: Mr. Stein?

MR. STEIN: No.

SECRETARY KLEIN: Mr. Stein?

MR. STEIN: No.

SECRETARY KLEIN: Mr. Glenn?

MR. GLENN: No.

SECRETARY KLEIN: Mr. Sullivan?

MR. SULLIVAN: No.

SECRETARY KLEIN: Thank you very much.

I would like to say at this time that the Assistant Secretary for Fish and Wildlife Parks is Dr. Leslie Glasgow, and I have had absolute cooperation from him on pollution affairs. Dr. Glasgow is just as interested in this as we are.

At this time, Dr. Eisenbud.

STATEMENT BY

DR. MERRIL EISENBUD

ENVIRONMENTAL PROTECTION ADMINISTRATOR

CITY OF NEW YORK

DR. EISENBUD: Mr. Secretary, members of the panel, ladies and gentlemen:

I am Merril Eisenbud, New York City's Environmental Protection Administrator. I welcome the opportunity to address this third session of the Conference on Pollution of the Hudson River and its Tributaries, the first to be held since the Environmental Protection Administration was created by Mayor Lindsay, and assigned responsibility for the City's program of air and water resources, and solid waste management.

The New York City presentation this morning and this afternoon will be given in several phases, including a presentation of the status of their construction programs by Commissioner Feldman, Commissioner of Water Resources, and Assistant Commissioner Martin Lang, who is Director of the Bureau of Water Pollution Control.

You will also hear a presentation by Assistant Commissioner Kent of the Department of Health.

The principal business before this conference is the assessment of progress that has been made throughout the interstate region towards cleaning up the Hudson River and New York Harbor. Before proceeding to a description of the status of this program, which will be presented by Commissioners Maurice M. Feldman of the Department of Water Resources, and Lang, I would like to discuss briefly its meaning in relation to the estuarine environment generally.

At this time in the history of our interstate urban area, and at this stage in the development of environmental control technology, it is essential that we look beyond the traditional techniques of sewage treatment critically important as these may be, to a system of environmental control that considers the totality of the estuarine environment. In New York City, we regard our responsibility for clean water as going beyond the construction of facilities designed to provide a high degree of secondary treatment to our liquid wastes. We think of our water pollution control responsibility as one of estuarine management.

The early stages of such a program have already been undertaken at Jamaica Bay where extensive ecological and hydrological studies are now in progress. The study embraces a quantitative assessment of existing marine life, water quality, measurement of wastewater input, and the effectiveness of the tidal flushing action. The ways in which these factors will be influenced by the Spring Creek auxiliary water pollution control plant which is now under construction are to be assessed, and the knowledge gained from this study will govern the design of future storm water treatment plants on the periphery of Jamaica Bay. Highly significant design characteristics such as degree of treatment and location of outfalls will be influenced by our findings. Our immediate goal at Jamaica Bay is restoration of its waters to a quality suitable for recreational use. The designation of Jamaica Bay by the Department of Interior as a potential national seashore has underlined the importance of proceeding with this program.

There is even greater significance in the extension of our ecological study to all the estuarine waters of the City. Although our present construction program is almost uniformly designed for a very high degree of secondary treatment, and although we are applying the latest treatment technology, our strategy is based on a Federal and State requirement for a stipulated biochemical oxygen demand removal, a policy that is excessively inflexible and is inconsistent with a rational program of estuarine management. In the future, the criteria for adequate wastewater treatment should not be expressed only in terms of the degree of treatment, but rather in terms of the fitness of the receiving waters for the uses to which they will be put. In some cases, it may be necessary to provide for the tertiary treatment of waste water effluents. In other cases, it may be desirable to construct far-offshore submarine effluent outfalls. Varying degrees of secondary treatment should be provided to meet the requirements of the various receiving waters and their varying uses. All such estuarine management strategies should be based on a thorough understanding of the ecology and hydrology of the receiving waters as determined from studies of the type we are now conducting at Jamaica Bay.

My associates and I were happy to learn this morning of the plans of the State of New York and the Department of the Interior for additional studies of the type that are now being financed by the Department of the Interior and carried on by the Department of Water

Resources in Jamaica Bay.

We accept the fact that the current generation of plants should be completed in accordance with the plans already laid down because we cannot tolerate any delay in eliminating the gross pollution that contaminates our estuarine waters. But in the decade ahead we will be building additional plants that will cost additional hundreds of millions of dollars, and we should begin immediately to mount the scientific investigations and the research and development that will be necessary in order to design the water pollution treatment plants of the future according to rational criteria established to meet clear-cut rational objectives.

We have applied all of the basic knowledge of the past and the program of the future will rest on basic scientific information that must be developed now. More specifically, we must learn how to deal with estuarine water pollution problems as a system of several interrelated parameters. We must re-examine the criteria of estuarine water quality to meet modern sanitary needs for any given combination of estuarine water uses. We must learn how to meet these criteria with maximum utilization of the mixing and flushing characteristics of the estuary with water pollution control plants that must somehow be designed more compactly and more efficiently using principles of treatment yet tobe invented.

The ecological studies on which intelligent estuarine management must be based should be augmented by a marine research program commensurate with the scale of our water pollution control program, and I want to emphasize that, in my opinion, the scale of research has been completely incommensurate with the level of expenditures for the plants we are now constructing--up to now, that is.

Too little is known, for example, about the epidemiology of water-borne disease. Existing criteria by which bathing beaches in the New York City area are pronounced safe or unsafe rest on entirely inadequate information. Our bay and harbor waters are potentially such a valuable recreational resource for the people of the City that we should have high confidence in the criteria that determine whether a beach can or cannot be made available for bathing.

Because the question of estuarine water resource management has such great significance for the entire Nation beyond the precincts of the Hudson River

Valley, it will be the subject of an important study conference to be held next month under the sponsorship of the National Academy of Science and the National Academy of Engineering. The report of the conference, which is called "Coastal Wastes Management", will be presented to the Federal Water Pollution Control Administration. Perhaps this report will lead to Federal sponsorship of the research that is needed. Certainly the much appreciated Federal grant that made the current ecological study of Jamaica Bay possible will demonstrate the immense practical value of such estuaries research projects.

Incidentally, Assistant Commissioner Lang, who has been instrumental from the beginning in the concepts and the execution of the Jamaica Bay study, has been invited to attend that conference.

With particular respect to the Hudson River, it is altogether too plain that it has suffered severe damage from the dumping of sanitary waste from the communities that line its banks, but apart from these gross ecological insults, there is a surprising dearth of basic information about its physical and biological features. We have, for example, no systematically developed information about the flora and fauna of the river over any extended period of time. Neither do we have any long range temperature measurements even for the estuarine portion of the river which has for centuries been of vital importance to the economic and cultural existence of our City and Nation.

The important reference made this morning by Congressman Ryan to the extraordinarily important finding by my former associate at New York University, Dr. Howells, that the Hudson River has ecologically speaking the characteristics of a lake rather than of a river, is of immense importance, and this is the kind of thing that we have yet to learn about this important waterway.

Although the existing water pollution control projects are, beyond any question, necessary steps in the conservation of our great river, the water pollution control efforts of the future, which will cost billions of dollars from the budgets of the two States and the municipalities in the watershed, should be planned on sound ecological evidence that they will restore the river to a quality suitable for projected uses. The current arbitrary standard, a percentage of BOD removal, will clearly be an inadequate standard for future control efforts.

Let me now turn to New York City's current program of water pollution control and its effect on the lower Hudson. I might say at the outset that when the river arrives at our northernmost boundary it is already in a very seriously polluted condition. At this time, it undergoes substantial further degradation from the discharge of raw and inadequately treated sewage from New Jersey communities and from the City of New York. While I can, of course, speak only of New York City's control program, I assure you that all thoughtful citizens of our City are very interested in hearing the reports at this conference of the control steps taken by upstate communities in New York and by our westerly neighbors in New Jersey. Our hopes for the restoration of the quality of New York City's surrounding waters depends as much on the action of upstaters and New Jerseyans as they do on our own New York City control program. Thanks in substantial measure to the wisdom of the people of New York State in providing the Pure Waters Bond Issue, New York City has embarked on the largest program of water pollution control ever undertaken in its history.

Our current water pollution control construction program recommended by EPA will cost in excess of one billion dollars, of which 589 million dollars is being requested from New York State, thirteen million dollars is being requested from the Federal Water Pollution Control Administration, and the taxpayers of New York City will contribute 539 million dollars. These expenditures will permit the City of New York to provide high level secondary treatment to virtually all of its dry weather flow of wastewater. This is our high priority basic program, and I cannot help but note with pride--not for all of us, because much of this was done by the Administration before I came to it a year ago--that much of this basic program was already completed at the time of the passage of the State's bond issue. That fact, I hasten to add, does not make us less grateful for the State aid now available to complete this basic program.

Because all water pollution control construction must commence by March 1972 to be eligible for State and Federal aid, we have made substantial changes of traditional procedures to streamline the design and construction process, and the whole program is moving forward at a much quickened pace. Our construction schedule was rigorously examined three months ago at a public hearing conducted by our State Health Department. I am happy to be able to report that, based on information presented, the Hearing Examiner and the State Health Commissioner, concur with our conclusion that our construction schedule is feasible, and that it will be possible for us to commence the entire construction program by the deadline set in the bond issue legislation. Commissioner Feldman will outline the steps that have been taken to expedite our schedules this afternoon.

At the completion of the last elements of our construction program in 1975-1976, we shall have the capacity to treat all of our basic flow to the year 2000 in 14 major water pollution control installations, operating at an effectiveness in excess of 80 per cent BOD removal throughout the system. All of the final effluents from these plants will be disinfected. We can then look forward to a considerable improvement in the quality of Lower Hudson water and indeed an improvement in the quality of all the surrounding waters of the City. When, at a later time, other communities in the watershed approach equal performance in water pollution control, much of our shorelines will be restored for recreational purposes.

When we are further along in the work already begun of treating the storm water flow, in an auxiliary system based on sound ecological data, we shall recover for recreational use the Bay beaches with which New York City is so wonderfully endowed by nature.

I thank you for your attention, but more particularly, I thank you for the stimulation that this and previous conferences on the Hudson River have provided to all of us in this region who can benefit from the restoration of this great natural resource.

SECRETARY KLEIN: Dr. Eisenbud, I thank you for the statement.

I would like to say to you that it is an estuary, but at least it has a very good flow going through it. It does not have the same problems as the Potomac has around Washington where it just really does slosh back and forth.

I don't know if you realize what we did at that conference. We have gone a lot farther than the 80 per cent that was just called for here because of the fact that it does not have any flow, but we called for a total load going into the Potomac River, regardless of whether the population stays at 3.3 million or goes to five million or seven million.

At 3.3 million the removal in the Potomac today from the sewage treatment plants will require 96 per cent removal of suspended solids, 96 per cent removal of dissolved solids, 95 per cent removal of nitrogen and 95 per cent removal of phosphates. This, if I may put it to you, is exotic tertiary. This is a result of the conference, and the Secretary will promulgate it and that is a landmark in sewage treatment for a large metropolitan area.

I don't think you need it here, because of the fact that you have a good flow in the Hudson that we do not have in the Potomac in Washington.

DR. EISENBUD: The flow, Mr. Secretary, that you think you see in the Hudson is due to tidal action.

As a matter of fact, in the mid-Hudson, which is the really important part because this is a part of the river that is probably going to be used for drinking water in the years ahead to an increasing degree, it is also the part of the river that is probably most important from the point of view of long range recreational uses for the upstate community.

We have shown, and this I did before in a paper about to be published which I can make available to you, that the mean time of pollution introduced in the

Hudson River, the mean resident time, if you can think of it in that way, can be as long as 400 days.

This is because the net flow is so small relative to the tidal flow.

SECRETARY KLEIN: I would like to see that document about this silt just staying and just sloshing around, because it was my understanding that you had a pretty good flow here and that a good deal of it did go out directly, even though you did have tidal action herein.

Are there any questions?

Mr. Sullivan?

MR. SULLIVAN: I have a number of questions to ask, but I think I could more appropriately direct them to Commissioner Feldman this afternoon, about the program that has been outlined for us very briefly here.

One specific question of Dr. Eisenbud:

Is New York City under a legal mandate by the State to proceed with its construction program?

DR. EISENBUD: The answer, I believe, is yes.

MR. SULLIVAN: That is, the State of New York is satisfied with the progress and has invoked the sanctions of its remedial statutes against the City of

New York?

DR. EISENBUD: Yes, we are required to meet certain standards which have been established by the State and Federal Government, and our plants are being designed to those standards according to a schedule which Commissioner Feldman will outline for you this afternoon.

MR. SULLIVAN: I would like to talk about the schedule at that time and reserve my questions.

I was just wondering if the schedule that you have referred to here is embodied in an enforceable administrative order issued by the State Health Department.

DR. EISENBUD: The schedule that we are talking about refers to a schedule which I submitted to the State Health Department in December 1968, and which called for the upgrading of certain existing plants and the construction of new plants on a schedule which will be completed in mid-1970.

MR. SULLIVAN: But can this schedule best be characterized as an unenforceable agreement between the parties?

DR. EISENBUD: I think I would prefer to

refer that question to the State Health Department.

It is my understanding that this program has a mandate on it.

Now, as to the matter of enforcement, I think that is irrelevant because the City is committed to complete the program.

MR. SULLIVAN: All right; thank you.

SECRETARY KLEIN: Mr. Metzler?

MR. METZLER: Well, I would like to compliment Dr. Eisenbud on accepting the program which has been set forth and saying we are going to move through, but calling attention to the additional problems that we are going to meet the next time around and the importance of research to give us some answers before we start designing for the tertiary or the long outfalls to the ocean or whatever it may be.

There is one question I would like to ask you. Most of the questions I too would like to reserve until after we hear the testimony of this afternoon, but there is one question I think could be asked now and I hoped answered which relates to the progress which you have made since the hearing which the New York State Health Department held in March 1969.

At that time you projected a schedule which was basically the schedule that is the official one submitted in December of 1968, and you said that you had a system which indicated all of the critical points on this schedule and that this system gives you a monthly reading.

Have you been meeting these critical points since March of this year?

DR. EISENBUD: I think things have improved.

You will recall that at the March hearing there were a number of projects on which ground would have been broken uncomfortably close to the March 1972 deadline, but further streamlining procedures and with cooperation of your office, Mr. Metzler, we have provided a little broader margin of safety. I think that again this is something that Commissioner Feldman will discuss with the aid of these charts which are on the other side of the room after the luncheon break.

MR. METZLER: I would like to make one statement rather than perhaps a question at this point.

Your statement indicates that the New York State Health Department, the Commissioner of Health, felt that this was a possible schedule, and we all agreed that it was a very tight one. I just want to underline this by saying that it is possible, but it requires the very close cooperation of the City Council and the Board of Estimate and the other units of the City Government.

Thus far, there seems to be evidence that this will be forthcoming.

DR. EISENBUD: We have had excellent co-cooperation from all branches of the City Government, and the time that it has taken to negotiate contracts and get consultants working on these jobs has been reduced very, very significantly. In some cases, we have cut the time in half over what the situation was only a year or two years ago.

MR. METZLER: Thank you.

SECRETARY KLEIN: Mr. Glenn?

MR. GLENN: No questions.

SECRETARY KLEIN: Mr. Klashman?

MR. KLASHMAN: No questions.

SECRETARY KLEIN: Mr. Stein?

MR. STEIN: No questions.

SECRETARY KLEIN: We are a little bit later than we expected. We will resume at 2:15.

If any of you are from Federal installations and would like to be heard as part of the Federal picture, will you please contact Mr. Klashman during the recess, and if any of you have statements that you do not have sufficient copies of, would you see Mr. Klashman or his staff in order that we may be able to make enough copies of them for the conferees and the press?

Thank you very much, until 2:15.

(Whereupon, at 12:45 p.m., a luncheon recess was taken.)

* * *

AFTERNOON SESSION

2:15 p.m.

MR. STEIN: Let's reconvene.

In order to expedite the schedule and to accommodate the people who have to appear this afternoon, we will call on Mr. Sullivan at this time. Mr. Sullivan.

MR. SULLIVAN: I would like to invite to testify the Water Chairman of the New Jersey League of Women Voters, Mrs. Frank Rooney.

STATEMENT BY
MRS. FRANK ROONEY
DIRECTOR
LEAGUE OF WOMEN VOTERS
OF NEW JERSEY

MRS. ROONEY: I am Mrs. Frank Rooney, Director of the League of Women Voters of New Jersey. Our 92 local Leagues have long been concerned with matters relating to the waters in and around our State. Our concern over the pollution of these waters has intensified over the years as the problem has continued to increase and solutions have been unable to keep pace with the problem. Since these hearings were last held much has been accomplished to stem the tide of this continually expanding problem; water quality standards have been established and approved; plans have been drawn by municipalities for improved treatment facilities; industry has beeh working to reduce its pollution; and enforcement proceedings have been directed toward offenders. While these are important accomplishments our members feel that there is still much that should be done.

The League believes that the establishment of the Water Quality Standards was an important step in the pollution abatement process, but we are concerned by suggestions that the standards are unreasonable, that they will adversely affect the economy, and that they be lowered. We are strongly against any such move to lower the present standards. It is true that these standards will necessitate sizeable expenditures by municipalities and industry, however we can no longer afford to continue using our water resources indiscriminately.

This indiscriminate use of water is one of the reasons we are faced with the vast water pollution problems of today. We no longer can live with the concept of an open-ended environment where all wastes can be absorbed. The fact must be faced that our environment must be considered as a closed circle and we must learn to reuse our water resources. Industry and science with its vast resources and advanced technology will, when required, develop methods for the removal of wastes, and in so doing develop efficient and economical pollution abatement methods. The League again emphasizes that Water Quality Standards must not be lowered.

Many New Jersey municipalities and industries have been improving the condition of the effluent that flows into the Hudson River, and consequently the discharge of raw sewage into the river has diminished considerably. However, in order to meet the Water Quality Standards, secondary treatment must be accomplished by their treatment plants. Many have plans ready and approved by the State, but lack of funds prevents actual construction, as the municipalities are too poor to finance the construction themselves. The League of Women Voters feels that the Federal Government has an important role to play in the financing of these projects, and that it should give this role priority if the whole water cleanup program is not to collapse. The promise of funds by the Congress has led many communities to wait for financial help before starting construction on improved treatment plants. When the funds were not available, the problem intensified and costs went up, presenting an even more than difficult situation. The League is strongly urging that adequate funds be appropriated for the cleanup program before the problem becomes even more difficult and expensive.

Standards and adequate funds are important to a successful abatement program, however since voluntary control of pollution cannot be expected, enforcement is a vital part of the process.

This part of the process is probably the slowest and seems to receive the smallest share of attention. With the past and expected increases in population and industry in the Hudson River area the pollution problem can only increase at an alarming rate, and much emphasis must be placed on enforcement procedures. The League then urges that this be considered one of the most important parts of pollution abatement, that it is, and that adequate funds and personnel be made available to accomplish the job.

Problems of water pollution have too long been put in second and third place for funds and attention. Water is an absolute necessity to our health and economy. The League urges that it be given the priority it deserves in the future.

Thank you for this opportunity to testify before your committee.

MR. STEIN: Thank you.

Are there any comments or questions?

(No response)

MR. STEIN: If not, thank you very much, Mrs. Rooney.

You know, we had a reference to this this morning, and it shows you the strange ways everything works.

We were told about the meeting we were going to have of the National Academy of Science and Academy of Engineers on the study of coastal waste disposal to be held next month. Well, we really didn't know when Dr. Eisenbud mentioned it what this meeting was, or where it was to be held. You have to remember that this is on coastal waste disposal. These guys aren't so dumb. I don't think you will ever guess where they are going to hold this meeting--Jackson Hole, Wyoming. (laughter)

Let's call Mr. Glenn now for a presentation.

Mr. Glenn?

MR. GLENN: I would like to call on Dr. Natale Colosi, who is Chairman of the Interstate Sanitation Commission, to give our presentation.

MR. STEIN: While Dr. Colosi is coming up, let me tell you this:

I know a lot of people have worked with him a long time. Dr. Colosi has worked in this field for 40 years, or 35 years anyway, and has fought for cleaner air and water in the interstate area around Metropolitan New York. I don't know how many of you know he was awarded the Gold Medal for merit in public health by the President of Italy, Giuseppi Saragat, on July 7th. He and Dr. Jonas Salk are the only two Americans who have received this high award.

Dr. Colosi.

(Applause)

STATEMENT BY

DR. NATALE COLOSI

CHAIRMAN

INTERSTATE SANITATION COMMISSION

DR. COLOSI: Thank you very much, Mr.

Chairman.

Ladies and gentlemen:

My name is Natale Colosi. I am Professor of Bacteriology and Public Health at Wagner College and Dean of the graduate school at Polyclinic Hospital.

I am speaking here today in my capacity as Chairman of the Interstate Sanitation Commission.

The present session of the conference has been called to review the status of water pollution abatement in the Hudson River and its tributaries. Our statement covers the water area which is the subject of this Conference with the exception of that portion of the Hudson River that is north of the Bear Mountain Bridge--the limit of the Interstate Sanitation District. Since the second conference on September 20, 1967, many important steps have been taken toward the abatement of pollution:

1) The Newtown Creek Plant was placed into operation during the latter part of 1967 and is treating over 100 million gallons per day. The quantity treated will more than double this amount when the Manhattan pumping station is completed.

2) Chlorination facilities have been

added to ten plants.

3) Many industrial wastes have been either diverted to municipal treatment plants, eliminated by in-plant changes, or have been barged to sea.

4) Pilot plant studies have been completed at three plants.

5) Raw wastes from the Riverdale section of the Bronx are intercepted and pumped to the Wards Island Plant.

6) The Bear Mountain Plant has been upgraded to secondary treatment.

7) Passaic Valley Sewerage Treatment Plant has installed additional sludge storage tanks.

8) A ten million gallons a day secondary treatment plant was completed for Rockland County Sewer District #1.

9) Upgrading the F.D.R. Veterans Administration Hospital in New York to secondary treatment is under construction and is expected to be completed this year.

10) A new one million gallon a day Stony Point District #1 Plant in Rockland County is scheduled

for completion this year.

11) In addition, many plants in the District have been completed or have a substantial portion of their final design completed for upgrading from primary to secondary treatment.

Despite these steps in abatement of pollution, we are not satisfied with the progress being made in the construction of treatment plants. In retrospect to the 1970 and 1972 dates agreed to in our common desire to clean up the waters, the Conferees were not realistic about the time required to meet the political and legal steps necessary to bring a large treatment plant to the construction stage. We admit that there have been longer delays on some of the individual projects that are not justifiable. However, we believe that when account is taken of the size and complexity of the liquid waste disposal problem in this area, the overall record of the region is a reasonably good one. There are serious delays in execution of some of the abatement programs in the Lower Hudson. It is necessary to identify them, to examine the causes, and to offer some observations on the probable course of events during the next few years.

Because of the amounts of effluent involved, it seems appropriate to consider the New York City situation first. As we have reported to earlier sessions of this Conference, the Interstate Sanitation Commission has a long-standing Consent Order against New York City. Under its terms, a specific construction program was to have been completed by the end of 1967. It was for that reason that at the September 1967 session of the Conference, the Commission was particularly anxious to have the Conferees recognize the need for compliance with earlier completion requirements, regardless of any general recommendations concerning a date on which the entire abatement program for the Hudson as a whole might be finished.

A number of the projects required by the Consent Order were not completed and are certain to take still furhter time before they become operational. The Interstate Sanitation Commission commented on this situation in testimony given to an investigative hearing held by the New York State Health Department on March 25th of this year. A part of that statement is worth repeating here.

> "For the past several years, the Federal Government and New York State have held conferences

and hearings with New York City as the entire or partial object. Several different time schedules for construction have been embodied in these several proceedings or have been the subject of discussion.

"In each case, the position of the Interstate Sanitation Commission has been that at an appropriate time it might have to initiate legal proceedings to enforce its Consent Order. But it has also been clear that the fundamental objective is to abate pollution as rapidly as possible and that the practical problem has been to secure action by New York City according to a realistic schedule, starting from whatever point in time might be represented by a current discussion. It is for this reason that the Commission has not publicly objected when completion dates of 1970 and 1972 have been proposed for some projects. On the other hand, it is becoming increasingly apparent that even the more lenient proposals for time schedules are not being met by the City, and that still further delays may occur."

It is clear that what the Interstate Sanitation

Commission does will now depend on whether the City actually moves ahead expeditiously with construction and operation of the needed additional facilities, and whether it exercises reasonable effort to ameliorate the situation until such facilities can be completed, or whether the recently expressed intentions to compress time schedules are not borne out in practice.

The plants discharging into the Hudson River from Westchester and Rockland Counties are all within the Interstate Sanitation District. We are pleased that New York State has worked out arrangements so that many small plants will be eliminated by regionalization. The Yonkers plant is being upgraded to secondary treatment and will receive the flow which previously went to the Irvington, Tarrytown, and North Tarrytown plants. A new regional plant in Ossining will replace six old plants.

The plants of Upper Nyack, Nyack, South Nyack, and the Jewish Convalescent Home will be abandoned and will be tied in by interceptor to the Orangetown plant. A new plant which will serve the village of West Haverstraw and the town of Haverstraw will also take in the flow from the New York State Rehabilitation Hospital and Letchworth Village. We believe this regionalization will bring about much more efficient operation for treatment in these larger plants. New York State will report on the status of the upgrading of treatment plants in Rockland and Westchester in more detail.

At the last Conference, we reported that New Jersey State Department of Health had already issued orders in August 1966 requiring upgrading of treatment. In March and April 1967, amended orders were sent including a detailed timetable and requiring a removal of not less than 80 per cent of the biochemical oxygen demand. New Jersey also issued orders requiring chlorination of all the plants in the Upper Harbor area by the summer of 1967. When Passaic Valley did not chlorinate by the summer of 1967 and made no plans to install such equipment, the New Jersey Health Department turned the problem over to the Attorney General's office for legal action. The State of New Jersey started proceedings against Passaic Valley in order to obtain compliance. When Passaic Valley failed to meet the date on which, according to a New Jersey Health Department order, it was to have begun secondary treatment, this issue was added to the litigation. The Commission has cooperated with the State of New Jersey by furnishing technical information relating to Passaic Valley over a period of many years. The Court has ordered Passaic Valley to proceed with the necessary construction and to comply with the New Jersey Health Department's orders.

Passaic Valley appealed the decision and recently the Appellate Division of the Superior Court upheld the Lower Court's decision which in effect directs the Commission to proceed with improvements to treatment plants as directed by the State Health Department. The Commission has advised the Attorney General that at any stage of the litigation the Commission will assist, if desired.

Therefore, the Commission will not hesitate to take independent legal action if necessary to insure the upgrading of treatment so that it will meet the State, interstate and Federal standards. The other New Jersey communities with the exception of Passaic Valley are chlorinating this summer in compliance with the New Jersey Administrative Order.

It is impossible to assign a single, simple cause of failure to get on with the improvement of water quality at a rapid rate. Undoubtedly, everyone could do better.

In this connection, it is appropriate to remind the Conference of the observation made by the Conferees in 1967. At that time, it was noted that the failure of the Federal Government to appropriate anywhere near the amounts of money authorized by the Federal Water Pollution Control Act for construction grants was a serious brake on the pollution control program. In the past two years, this situation has gotten worse. It would appear that at the Federal level, no less than at the State, local and private levels, everyone is in favor of clean water, but enthusiasm is greatest when the finger can be put on someone else to perform and pay the bill.

In accordance with the plans we reported at the Conference in September 1967, additional treatment plants in the Upper Harbor area started chlorination by the summer of 1968. By this summer, all the plants in New Jersey that discharge into the conference area with the exception of the Passaic Valley Sewer Plant will provide chlorination.

As we stated previously, the Court has now ordered Passaic Valley to provide chlorination and to proceed to construct secondary treatment facilities. This summer, New York City is expected to be providing chlorination at the Owls Head Plant, Newtown Creek, and Port Richmond plants for the first time. This should offer some improvement in the bacteriological quality of area waters but the big change will be made when:

1) The pumping station on Manhattan to the Newtown Creek Plant is completed and removes another 150 million gallons a day of raw waste for treatment, and

2) The chlorination facilities have been completed at the Passaic Valley Plant.

The Interstate Sanitation Commission at the previous Conferences on the Hudson River pointed out that the magnitude of the pollution problem caused by discharges from combined sewer overflows.

Unfortunately, a large portion of the New York Metropolitan Area has combined sewers and after all the dry weather flow has been intercepted for treatment over 800 million gallons of raw waste will be discharged during times of rainfall in the Upper Harbor area alone. A large portion of this will pass through the Narrows in less than one tidal cycle. The report presented by the Federal Water Pollution Control Administration on combined sewers at this Conference clearly points out that there is not a ready solution to correct this problem.

In 1962, the New York City Department of Health suggested that a dike extending from Fort Wadsworth and connecting to Hoffman Island and then to Swinburne Island might be desirable to deflect the flow through the Narrows during rainy periods from South Beach of Staten Island so as to improve the bacteriological quality of the beaches. A similar dike was suggested to extend from Seagate out about 4300 feet to deflect the flow from the beaches of Seagate and Coney Island.

A joint pollution study on the Corps of Engineers New York Harbor model at Vicksburg, Mississippi included dye studies with and without these dikes for comparison, and this preliminary investigation indicated that they should improve the beach waters in these areas. This plan was not received with much enthusiasn from several agencies and we believe some of the opposition was that some felt that this was to be substituted for additional treatment for the wastes. Now that it has been agreed that secondary treatment will be required throughout the area, some of the agencies are reconsidering use of these dikes.

The Environmental Protection Administration in New York City, under the direction of Dr. Eisenbud, has been studying the possibility of building cofferdams between Hoffman and Swinburne Islands for the dual purpose of the disposal of incinerated material and to provide a new park. We understand that New York City has had some discussion with the Corps of Engineers on this proposed project and the connection of this enlarged island by dike to Fort Wadsworth. We would hope that this Conference as one of its recommendations might endorse this as a worthy project to be considered to further improve the beaches of the area. We would like the dike at Seagate to be considered for inclusion in these studies.

Another factor influencing the quality of area waters, and indeed the entire process of waste treatment, is the disposal of sludge. To date, the Federal Water Pollution Control Administration has not proceeded effectively to develop a firm policy on this subject. Since disposal at sea is one of the major alternatives in the Conference area, and the Federal Government is the only level with effective jurisdiction to control disposal beyond territorial waters, it behooves the Federal Water Pollution Control Administration to produce a policy which is both certain and reasonable in this field.

For this reason, we were disturbed when a Federal contribution to the cost of a New York City sludge barge was held up for months, until it was decided whether digested or undigested sludge would be barged. Even now, it is not clear whether Federal Water Pollution Control Administration policy would like to restrict disposal of digested sludge or would consider disposal of undigested sludge if barged farther to sea.

Vacillation also is harmful in the area of industrial waste disposal. Increasingly, industries in this area are considering the barging of waste to sea. They, too, need to know what will be permitted and what will not.

In a discussion with Secretary Klein, we mentioned that this problem would be brought up at this Federal Conference. He requested a letter pertaining to this prior to the Conference.

Attached to the record which I am reading is a copy of that letter, and I would like to ask you, Mr. Chairman, if you will please introduce a copy of the letter into the record.

MR. STEIN: The full letter will be made part of the record.

DR. COLOSI: Thank you very much.

Secretary Klein has responded that after a study this summer, a policy would then be formulated. The Commission then wrote and raised a question that we should consider at this Conference. We quote from the letter:

> "We certainly agree that such a policy will have far-reaching effects and that the very best scientific information should be weighed before making such an important decision. However, it is unfortunate that decisions on the handling of sludge must be made now by many municipalities and authorities in this area if the implementation plans of the states to meet the Water Quality Standards are to be met as expeditiously as possible.
>
> "At the present time, the Federal Water Pollution Control Administration has made an administrative decision that all treatment plants to qualify for a Federal Construction Grant must

include facilities for digestion of sludge before barging to sea. At the Federal Conference on the Lower Hudson on June 18th, we will request that this administrative policy be rescinded until your study has been completed and an overall policy has been set. Then, if it is decided that digestion will be required, the plants would be required to provide the proper digestion facilities and the schedules for the construction of treatment plants may proceed without waiting for a final policy decision."

The Interstate Sanitation Commission has felt for some time that its responsibility was not only to cooperate with the States in abatement of pollution by securing the construction of treatment plants, but also that completed plants are operated as efficiently as possible. For many years, the sampling of treatment plants has been one of the major activities of the Commission, since it is obligated to assure each of the participating States that the treatment plants in the District are meeting Compact requirements. We believe that we are the only interstate agency which samples on a regular basis. These investigations make it possible to detect plants which have become obsolete or overloaded, so that corrective measures may be taken to insure continued compliance with effluent standards. Our fieldmen also make shoreline surveys to detect bypassing by regulators and pump stations, or any other illegal discharges. There are now 143 treatment plants discharging to our District waters with a total of well over one and-a-half-billion gallons a day being treated. Less than 280 million gallons received even the minimum treatment in 1936. The flow receiving secondary treatment has increased from 2,250,000 gallons to the present 1,036,530,000 gallons per day. The Commission is now expanding its laboratory so that it can also sample industrial effluents on a regular basis. We have already made an industrial survey of a large portion of our District so that the abatement of pollutants due to industries will move forward at the same time as the abatement of pollution from domestic sources. The Commission received delivery of a new mobile laboratory recently. It will be used to aid in the instruction of plant operators at the plant site and on sampling and testing of their own wastes. Since all the plants will now be required to have secondary treatment, a properly operated laboratory will be necessary for good operation of these more complicated treatment plants.

Since abatement of land sources of pollution should become a reality in the foreseeable future, pollution from vessels of all types and sizes will constitute one of the major remaining problems. In recognition of its importance, in April of last year, the Commission sponsored an Interstate Conference on Boat Pollution. We have had many requests for copies of the transcript from all over the United States. The Commission wishes to do its part in promoting uniform regulations by the signatory States in the New York Metropolitan area.

The Commission will continue to cooperate with the local, State and Federal authorities for an active pollution abatement program. We are sure that the combined efforts will bring about the improvement in the quality of the waters which we all desire. It is clear that the fundamental objective of all of us is to abate pollution as rapidly as possible. Therefore, we should insist on realistic schedules from this point in time and make it clear that necessary legal action will be taken if they are not followed.

Thank you very much.

(The following document was presented by Dr. Colosi for inclusion in the record:)

May 23, 1969.

Mr. Carl L. Klein, Assistant Secretary
Water Quality and Research
U. S. Department of the Interior
Washington, D.C. - 20242

Dear Mr. Secretary:

It is of great and immediate importance that the Federal Water Pollution Control Administration develop and announce a firm policy on the disposal of sludge and industrial wastes at sea. Because of its crucial importance in the Greater New York Metropolitan Area, the subject will be raised in the statement of the Interstate Sanitation Commission at the Hudson River Conference now scheduled for June 18-19, 1969. However, we believe that fruitful consideration of the matter at that time will benefit from advance thought by you.

The reason for urgency is that decisions are being made now in connection with the upgrading of domestic treatment plants. The disposal of sludge must be considered as a part of this decision. Some industrial wastes are also not amendable to treatment and one solution is to barge these wastes to sea. Whatever alternatives municipalities and industries select involve large investments. If the method chosen cannot be relied upon for some years to come, millions of dollars will have been wasted in the New York area alone, and the problem will be no closer to solution at the end of the process than it was before the expenditures were made. The costs include investments in digesters, barges, incineration equipment, and plant design and construction.

The disposal of sludge at sea appears, at first glance, to be questionable, especially if the sludge is undigested. However, we believe that proper analysis of the problem requires a consideration of available alternatives, so that governing policy will make distinctions that accord with the facts and will encourage selection of the most appropriate disposal methods.

There are only a limited number of alternatives for dealing with sludge or industrial waste that cannot be treated:

1) Disposal on land;
2) Disposal in underground wells;

3) Disposal at sea on the Continental Shelf.

The safety and cost elements involved for each method must be weighed.

1) Disposal on Land--Land disposal of sludge would require either sludge drying beds or vacuum filtration before placing on the land. In the vicinity of large metropolitan centers, the solid waste disposal problem is already of stupendous proportions and is even further from being solved than is the water pollution problem. Instead of placing on the land, the sludge may be incinerated which may result in air pollution. While the FWPCA is not responsible for solid waste or air pollution problems, it should think very seriously before adopting a policy which would tend to intensify environmental hazards of any sort. Industrial wastes would have the same type of problem for discharge on land but in addition may be toxic. Also, industrial wastes on land could infiltrate and contaminate the ground waters.

2) Deep Well Disposal--This alternative may remove the industrial wastes from sight, but it well may be the most danerous of all methods of disposal.

There is already evidence that wastes disposed underground have contaminated water supplies, polluted the soil and, in one instance, possibly contributed to an earthquake. Moreover, deep well disposal is probably the most irretrievable of the alternatives. There is no known means of cleaning up, once wastes have broken out of the strata and immediate locations in which they have been deposited and such disposal lacks the dilution afforded by sea.

3) Disposal over the Continental Shelf--Offshore discharge of sludge within a relatively few miles of the coast is an expeditious means of disposal at comparatively modest cost. Digested and undigested sludges have been discharged for years in waters adjacent to Lower New York Bay with no known harmful results. Unless studies show that it is harmful, there is every reason for continuing the discharge of at least digested sludge. Digested sludge is stable and places little if any demand on the oxygen supply of the water into which it is discharged. Industrial wastes should be banned in this area.

4) Disposal beyond the Continental Shelf--If it is decided that the risks or objectionable effects

of the discharge of undigested sludge over the Continental Shelf, even at considerable distances from the coast, are too great, it should be possible to permit dumping of sludge beyond the Continental Shelf. In the New York area, this would place the point of discharge at least 120 miles at sea. The dilution that would take place that far at sea and the great distance from population centers should reduce or obviate any reasonable objections.

However, in making such a decision, careful note should be taken of the relatively little difference in effect between the discharge of undigested and digested sludge so far from the coast. The only significant difference between digested and undigested sludge is that the latter involves biochemical oxygen demand. Oxygen is no problem in the open sea. Undigested sludge would not be toxic to fish. Over a period of time, undigested sludge is rendered stable and thus achieves the same results without the costly digestion process.

Finally, there is evidence that digestion processes at treatment plants produce side effects that could aggravate present difficulties. The liquid cycled back into treatment plants when sludge is digested is high in nutrients.

These would be discharged in the treatment plant effluent and would increase the growth of phytoplankton in the receiving waters. This can be a problem of varying seriousness, depending on the point of discharge and the characteristics of the receiving waters.

Barging of industrial wastes to sea should be decided for each case and should be restricted to wastes that would be difficult to treat. However, it would be more desirable to use this alternative than the more objectionable ones as previously stated. It might be appropriate to require reasonable pretreatment before disposal at sea, to whatever degree practicable, such as neutralization of acidity.

In conclusion, we wish to point out that the problem of sludge and industrial wastes disposal is not a simple one. The question is not whether we would prefer to forego sludge and industrial waste dumping at sea, but rather whether such dumping under reasonable restrictions is the best available alternative. Also, of first importance is the need for a firm and a prompt decision. Only the Federal Government can make the decision, because only that level of government has authority over disposal beyond territorial waters.

Also, we would urge upon you that the decision be made in consultation with all of the affected interests. The environmental programs of state and local governments are materially affected, as are the plans and operations of many industries. It may not be possible to devise and implement a policy which fully satisfies everybody, but it is essential to strike the best balance that can be obtained.

If we can be of any further help in this matter, please do not hesitate to call upon us.

Very truly yours,
Thomas R. Glenn, Jr.
Director & Chief Engineer

* * *

MR. STEIN: Thank you very much, Dr. Colosi.

Are there any comments or questions?

MR. SULLIVAN: Dr. Colosi, first, we are fully in accord with the recommendations you have made concerning the sludge and barging to sea and as to the need for a temporary decision as to the requirement that grants not be given unless sludge treatment be provided, but I have a question.

On page 2 of your testimony, at the bottom of the page, you make reference to a Consent Order against New York City, and that under its terms, a construction program should have been completed by the end of 1967.

Then you go on to make reference to the fact that the Commission was particularly anxious to have the conferees recognize the need for compliance with earlier completion requirements, regardless of any general recommendation concerned, etc., but on page 11, in your concluding comments, the recommendation is made, and I will paraphrase it, that "we should insist on realistic schedules from this point on and then adhere to those."

Now, first, I am uncertain as to whether there is any conflict between those two, and, second, I wonder if you would consider consistent with what you have recommended on page 11 the acceptance by your commission of the extended schedule for completion that was proposed by New York City in testimony this morning.

DR. COLOSI: Well, I cannot say whether what was testified here this morning will be accepted or not because it is a matter for the entire Commission to discuss. Perhaps Mr. Glenn can answer.

MR. GLENN: I think the main point on this, Mr. Sullivan, is that we realize it is impossible for them to start their plants now, construct them and complete them three years ago, so from a practical standpoint, if it is the desire of this conference to recognize this and proceed from this point, we state that any dates that are set or that are proposed should not be allowed to be extended without legal action being taken, but we recognize the fact that it will be impossible to do something three years ago.

We also make it clear that we have not changed the dates on those, so that when legal action is taken, it will be taken on the violation of our Consent Order of the dates prescribed in the Consent Order and not the new dates.

MR. SULLIVAN: If I respond your response, it is not your intention that recognition of these practicalities nullifies the Consent Order?

MR. GLENN: No, because if it was found that we would have to take this legal action, it would be based on the dates that were not met, not on these new dates.

MR. STEIN: Are there any further questions or comments?

(No response)

MR. STEIN: I would just like to go into one thing, Dr. Colosi, and I hope New York City will take this up and I will defer comment until later. This is about the waste from Manhattan taken to Newtown Creek and the kind of treatment given there.

I think in any transshipment of wastes, we want to see what happens before it gets out.

I don't think I will make a comment on that until we hear the full New York presentation, but I think it behooves the conferees to follow the wastes from wherever they originate to wherever they are transported to see that they are adequately treated before being discharged.

MR. METZLER: I am not going to prejudge this, but I think you will find when the City makes its presentation, that you can follow those wastes all the way from Manhattan Island to their ultimate disposal, and you will find that the plans are adequate.

MR. GLENN: Also, Mr. Chairman, it should be pointed out, since you brought that point up, that the treatment plant for over 300 million gallons has been completed. It is only due to a construction problem that this pumping station was not completed on time.

The facilities for it are all ready. It is just a case of completing the pumping station and physically getting to this new plant.

MR. STEIN: I am just dragging the question. I don't have one now, but what I think the audience should realize is that we are not running a shell game. We are following the wastes to the place of discharge, and I am sure that the Interstate Sanitation Commission, New York State and New York City have a rational program.

It is like a transbasin shipment of water. You have to follow that to where it goes.

MR. GLENN: It is clear across the East River.

MR. STEIN: Right, when you are taking it from Manhattan to another borough.

You know, when I grew up in Brooklyn, we really hesitated before we would date a girl from the Bronx (laughter).

DR. COLOSI: How about in Staten Island?

MR. STEIN: Staten Island was in another world in my day.

Are there any further comments or questions?

(No response)

MR. STEIN: If not, thank you very much, Dr. Colosi.

DR. COLOSI: Thank you.

MR. STEIN: At this point, I think we will turn the rest of the afternoon over to New York State.

We have to give up this room at 5:00. We will try to get as much completed as we can before then.

Mr. Metzler?

MR. METZLER: Thank you very much, Chairman Stein.

I am anxious to extend the same courtesies to those from New York as has already been extended to those from New Jersey, who can only be here today.

In doing this, I am going to remind them, however, that it is important that some additional testimony from both the State and the City go on yet today before 5:00. This is not intended to rush you, but rather so that your statements may be concise, and I will warn the conferees against asking you too many questions.

The first witness from New York State I am going to call upon has indicated he can only be here this afternoon. That is Mr. Gordon Cameron, from Croton-on-Hudson. Is Mr. Cameron here?

(No response)

MR. METZLER: I get a signal back there that he has already left.

Then we have Mr. Guy Griffin from Westchester County.

Incidentally, Mr. Cameron's statement was written, and I ask that it be included in the record as though he had read it.

MR. STEIN: This will be done without objection.

(The following is the statement of Mr. Gordon K. Cameron submitted for the record:)

VILLAGE OF CROTON-ON-HUDSON, NEW YORK

STATEMENT BY

MR. GORDON K. CAMERON

VILLAGE ADMINISTRATOR

CROTON-ON-HUDSON, NEW YORK

The Board of Trustees of the Village of Croton-on-Hudson, appreciates the opportunity to appear before this year's session of the Conference on Pollution of the Hudson River and its Tributaries. It is hoped that the observations made in this statement, while primarily of a local nature, will tend to contribute to an analysis of the over-all problem and to a final coordinated multi-governmental solution to the problem.

Let me begin by saying that Croton-on-Hudson is probably a classic representative river-front community. The Hudson River dominates dominates the environmental elements which determines the final shaping of such a community. The river is a featured element in the industrial, recreational, and scenic planning.

The Village of Croton-on-Hudson expends many thousands of dollars annually in the planning function. The Board of Trustees and the Planning Board have for guidance a professional planning consultant firm. It is interesting to quote from the recently issued and updated Comprehensive Development Plan presented to the Board of Trustees by the Planning Board and the Consultant for Village Board action, and to note the impact that the Hudson River has had on this document.

Quoting from this document I'd like to make several points stressed by the planners on the inter-relationship of the Hudson River to the Community's overall planning:

> "The Comprehensive Development Plan for Croton-on-Hudson is based upon a series of broad general objectives which the Planning Board feels best respond to the specific environmental and developmental characteristics of the Village.
>
> "Recommendation: Preserve those natural features of the Village which give it a pleasant open setting and which serve as an attractive background. Most importantly, preserve and rehabilitate Croton's waterfront lands on the Croton and Hudson Rivers"

P. 3- Comprehensive Development Plan, May 1969. Croton-on-Hudson, N. Y. - and other recommendations from the same report that stress the local concern for rehabilitation and greater utilization of the Hudson River waterfront--

> "Croton's waterfront has long been considered a resource which has not been fully utilized. Within the context of the revised Plan, a substantial amount of effort has been addressed to the opening up of the waterfront."

P. 5, Comprehensive Development Plan, May 1969.

Beyond the planning function the Village of Croton-on-Hudson is currently working towards the acquisition of more lands on the Hudson River waterfront to add to an existing municipal park, i.e. Senasqua Park, that offers the only local public access to the Hudson. The Board of Trustees is also currently involved in efforts to preserve the natural values found in the Croton River that flows through the Village finally emptying into the Hudson River. The Village of Croton is also cooperating in the establishment of a part-county sewage district--the proposed Ossining Sanitary Sewer District, designed to meet State standards for treatment of municipal wastes. This project has a projected completion date of January 1972.

I have made the preceding comments to indicate to this conference the very real concern and the attendant efforts that one local municipality is undertaking to realize the full potential of the great natural resource that flows by the front door of that community.

In this undertaking the Village finds itself constantly confronting Hudson River problems that go beyond the resources and jurisdictional limits of the

Village. This is particularly true in that area of the remedying of the tragic past misuse of the public waters of the Hudson.

The Penn Central Company, with its repair works, a large commuter operation, and diesel electric changeover point located at Harmon within the Village limits, has been cited as one of the major polluters of the Hudson River in the Croton area.

This pollution takes the form of dumping of large quantities of spilled diesel fuel directly into the Hudson River at the mouth of the Croton River. The Company, according to recent newspaper accounts, has been cited on 14 different occasions in recent years for the same offense by the Corps of Engineers. Penn Central pollution of the Hudson River has been chronicled and featured on national TV as well as other media. Yet the pollution continues unabated. During this past spring, Penn Central oil wastes coated the local shoreline and indeed threatened the operation of the locally operated municipal Hudson River park--Senasqua Park.

The Village Board of Trustees has filed notice of this pollution activity by Penn Central at every level of government, including County, State and

Federal jurisdictional agencies. The notable lack of response to local requests for relief from this continuing form of water pollution has left the Village with a feeling of hopelessness.

This is only one example of the incongruities of Croton's attempts to more fully realize the benefits of the Hudson for the local residents. An even more difficult to understand example is Westchester County's continuing development of the amply blessed Croton Point Park which in turn is the site of one of the more horrible examples of garbage operations on the East Coast, being located directly at the entrance to that same County Park. The question that occurs to the concerned Crotonite is--"Are certain areas doomed to be consigned as environmental dumpsites for the balance of the region?"

On Monday, June 16, 1969, the New York Times published an in-depth account of the national crisis in disposal of solid wastes. A statement was made by the writer that such problems were beyond the capabilities of the local municipality to handle. It has been Croton's sad experience to come to the cynical conclusion that after many years of effort, control of water pollution has failed at the regional level. I note from Doctor Ingraham's invitation to address this conference that the Conference was originally convened in September 1965. Croton-on-Hudson has been addressing itself to the problem of Penn Central oil pollution for all of those years and if a solution to the basic problem of Penn Central's oil wastes being dumped directly into the Hudson River is any closer to solution, than four years ago, no one in Croton is aware of that fact.

May I make the following suggestions to your conference as means of dealing more effectively with the loss of the Hudson River waters to the public--

1. Establishment of informational services to local jurisdictions by State, Federal and interstate agency activities on programs to abate pollution problems in local areas.

2. Field service visits by all agencies to local municipal bodies to review local pollution problems with local jurisdictions.

3. A review of the breakdown of existing statutory controls over water pollution. Legislative remedies at the proper levels of government to check and correct the current obvious erosion of existing Statutes to the point of ineffectiveness.

There is encouragement for all involved in the water pollution battle in the success of the upgrading of local sewage operations under New York State's cooperative "Pure Waters" program through State funding of acceptable sewage operations. Local government is ready to cooperate in the same spirit in common areas of water pollution control. It is hoped that there will be a serious consideration given to Doctor Ingraham's reference to the formulation of a plan for action particularly in the area of industrial pollution of the Hudson. The time has come to end the denial of the full use of the Hudson River waterway to the public at large.

Thank you.

STATEMENT BY
MR. GUY GRIFFIN
DEPUTY COMMISSIONER OF PUBLIC WORKS
FOR WATER POLLUTION CONTROL
WESTCHESTER COUNTY
STATE OF NEW YORK

MR. GRIFFIN: Mr. Chairman, members of the Conference, ladies and gentlemen:

I am Guy Griffin, Deputy Commissioner of

Public Works for Water Pollution Control in Westchester County.

At the present time, considerable progress has been made to implement the recommendations of the County-wide Comprehensive Sewerage Study, as recommended by and financed by the New York State Department of Health. It should be recognized that the advent of the Comprehensive Sewerage Study has imposed a delay of about one year to the County and other liable municipalities on the Hudson River in undertaking the necessary work for the expansion and improvement of wastewater treatment facilities.

I want to say, however, in spite of this delay, the final results will be better because of the Comprehensive Study. It has been shown how smaller communities can be brought together and combine their efforts and come up with one plant serving several communities. A number of smaller plants will be replaced with county operated regional facilities.

The Town of Ossining, and the Villages of Ossining, Briarcliff Manor and Croton-on-Hudson have petioned the County Board of Supervisors to form a new county sewer district to include therein all or parts of their municipalities, and for the County to assume responsibility for carrying out the recommendations of the Comprehensive Report by the construction and operation of a regional wastewater treatment plant and trunk sewer system. Consulting engineers have been hired to determine the bounds of the proposed district, to assist in its formation, and to review the choice of a new plant site. The work has now progressed to the point of holding a preliminary public hearing on the formation of the new sewer district, as required by the County Administrative Code, which is scheduled to be held this coming Friday. The next step will be for the Board of Supervisors to hold its formal public hearing and then to take action on setting up the district. The way will then be clear to request County funds in the name of the new district and to authorize the engineers to proceed with the preparation of the Wastewater Facilities Report. Much has already been done in anticipation of preparing that report.

The City of Peekskill, the Town of Cortlandt, and the Town of Yorktown have petitioned the County to form a County sanitary sewer district to include all or parts of their land areas. These municipalities, in order to expedite matters, have forwarded checks to the County to pay the costs of establishing the district.

Once the district has been established by act of the County Board of Supervisors and funds have been appropriated in its name, then the monies advanced become a responsibility of the new district. The City of Peekskill included in its contribution funds to cover proportionate costs to a major industry (Standard Brands) wishing to be included in the new district. It has been established by research at the expense of the industry that its wastes can be made amenable to treatment by a secondary aerobic treatment process. It has indicated its willingness to share in construction and operating costs. The project, as now envisioned, is in consonance with the recommended project of the Comprehensive Study.

The Villages of Tarrytown and North Tarrytown have indicated their desires to be included in an extension of the County Saw Mill Valley Sanitary Sewer District and for the County to carry out the recommendations of the Comprehensive Report calling for the discharge of their sewage to the existing County trunk sewer system.

Similarly, the Village of Irvington has indicated its desire to be included in an expansion of the existing North Yonkers Sanitary Sewer District and to be served by an extension of the North Yonkers trunk sewer system. Both of these proposed actions for the Tarrytowns and Irvington will eliminate existing treatment plants by the construction of pumping stations and intercepting sewers.

The consulting engineers, employed by the County to prepare the required Wastewater Facilities Report for expanding and upgrading the Joint Treatment Plant at Yonkers, have just submitted for comment and review the preliminary draft of the last section of that report. Soundings and borings already taken on the site for the necessary expansion indicate a much greater depth of unsuitable foundation material than anticipated from the information available from the construction of the present plant site. This situation calls for a careful consideration of the type of construction to be followed in the site preparation. The increased size of plant and secondary treatment call for an increase from the present fourteen acres to a total of about 35 acres, which includes some allowance for future expansion.

To date, the only Hudson River project on which sufficient detail work has been done to verify or adjust the estimated costs set forth in the Comprehensive Report is the Yonkers Project. There the preliminary revised estimate of project cost indicates an increase from the original estimate of about $40,000,000 to as much as $52,000,000. Best current estimates of costs on the other projects are:

Irvington, $700,000;

Tarrytown, $2,700,000;

Ossining, $9,400,000; and

Peekskill, $16,600,000.

A total estimated cost of $81,400,000.

On all projects on which the County of Westchester is presently under Orders from the New York State Department of Health, it is the intention of the County to make every effort to meet the established schedule for prosecution of its work, and to meet the standards which have been set up by the Health Department.

Thank you.

MR. STEIN: Thank you, sir.

Are there any comments or questions?

MR. METZLER: May I ask one question?

I have been impressed by the kind of support that we are getting from the County Executives and the County officials.

Do you see any major roadblocks in the way of moving these projects according to the schedules you now have with us?

MR. GRIFFIN: The only things that we can see, Mr. Metzler, are whether the engineers can meet the schedules in getting out the plan, and, second, whether there will be contractors available to do the work, and, third, the time that maybe required to make and deliver the equipment which is necessary.

Those are facts which we can't do much about except to expedite as we go along and to make every effort to do that.

MR. STEIN: You know, there is a peculiar bit of Americana here, and this is what we always have.

We deal with a very dirty business, but our language is most antiseptic when we talk about these things.

Then we look at these things and we find Irvington, $700,000; Tarrytowns, $2,700,000; Ossining, $9,400,000; and Peekskill, $16,600,000, and, you know, Peekskill has the big industry.

What do they talk about? "The City of

Peekskill included in its contribution funds to cover proportionate costs to a major industry (Standard Brands) wishing to be included in the new district. It has been established by research at the expense of the industry that its wastes can be made amenable to treatment by a secondary aerobic treatment process." That is Standard Brands.

Now, Fleischman makes yeast but they also make another product.

MR. GRIFFIN: I understand it's pretty good.

MR. STEIN: Right (laughter).

You've got my testimony. Mr. Metzler?

MR. METZLER: The next witness who has asked to be called this afternoon is Mr. Fred Wurtemberger, who is here representing the Rensselaer County Sewer District.

I might say that Mr. Wurtemberger is a representative of the new breed of new manager for regional sewer systems in New York State, and another example of how they raid the New York State Health Department to get manpower for this operation.

MR. WURTEMBERGER: Thank you.

MR. METZLER: You're welcome (laughter).

STATEMENT BY

MR. FRED J. WURTEMBERGER, P.E.

ADMINISTRATIVE EXECUTIVE

RENSSELAER COUNTY SEWER DISTRICT NO. 1

MR. WURTEMBERGER: In case you have forgotten, there is pollution 150 miles north of here in the capital district area and I am here to talk about what we are doing in Rensselaer County.

The purpose of this statement is to inform you of the status of the Rensselaer County Sewer District project and to request consideration of items that affect the financing and operation of this project.

A public hearing has been scheduled for June 25, 1969, to expand the existing district, comprising the City of Troy and environs, to include the City of Rensselaer with its several large wet industries. The proposed expanded district is an outgrowth of the State's comprehensive study program and represents an excellent regional solution to water pollution abatement for the more populated areas of Rensselaer County.

I might add that this will include some

90 per cent of the population in the county.

If the hearing on June 25th and subsequent permissive referendum are favorable, the project will be enlarged from a 16 mgd treatment plant served by 80,600 feet of intercepting facilities to a 27 mgd treatment plant served by 118,000 feet of intercepting facilities. The total project cost will increase from approximately $18,000,000 to approximately $32,000,000, and this is big bananas upstate. As far as New York City, it is just small potatoes.

Bids for the first construction contract should be advertised during September 1970. Completion of construction of all facilities and commencement of operation of the treatment plant are scheduled for November 1972.

The secondary treatment plant will utilize a sophisticated and flexible activated sludge process. It will be designed to remove a high percentage of carbonaceous and nitrogenous BOD to meet stringent receiving water standards. These stringent standards are due to, in part, the second stage nitrogenous oxygen demands emanating from upstream discharges to the upper Hudson and Mohawk Rivers.

We request that significant upstream discharges be provided with a degree of treatment equally as high as that required for Rensselaer County project.

I know these discharges I speak of are outside of the area involved in this enforcement conference, but it is my understanding that coming over the Troy Dam, it impounds a BOD equal to that discharged in the capitel district area.

In addition, we request that existing and proposed thermal discharges upstream and downstream of our project and sludge deposits behind impoundments upstream of our project particularly of the Mohawk and the Hudson be given proper consideration as to their effects on the oxygen and ecological resources of the Hudson River.

Our third request involves eligibility for construction aid of sewage intercepting facilities. The numerous streams and lakes within the interior of our district are being degraded from raw and septic tank-leaching system effluents. The excessive expense of abating this pollution can be lessened appreciably by extending aid eligibility to include sewerage facilities which are parallel to streams and facilities that follow the circumference of lakes.

I understand the House at the Federal level has passed some legislation on research as far as pollution of lakes is concerned. I don't know what the status is in the Senate but as far as these small lakes are concerned, we don't need any research. All we have to do is get the sewage off of the watershed, and this we can do very readily by putting in interceptor sewers.

The only salvation of interior streams and lakes is to divert discharges off watersheds. The Rensselaer County Sewer District would construct this type of diversion and interception facility if provided with sufficient State and Federal aid.

The opportunity to present this statement is appreciated.

I have an additional explanation about the Rensselaer County Sewer District in a promotional brochure which I will now hand out to the conferees.

Thank you.

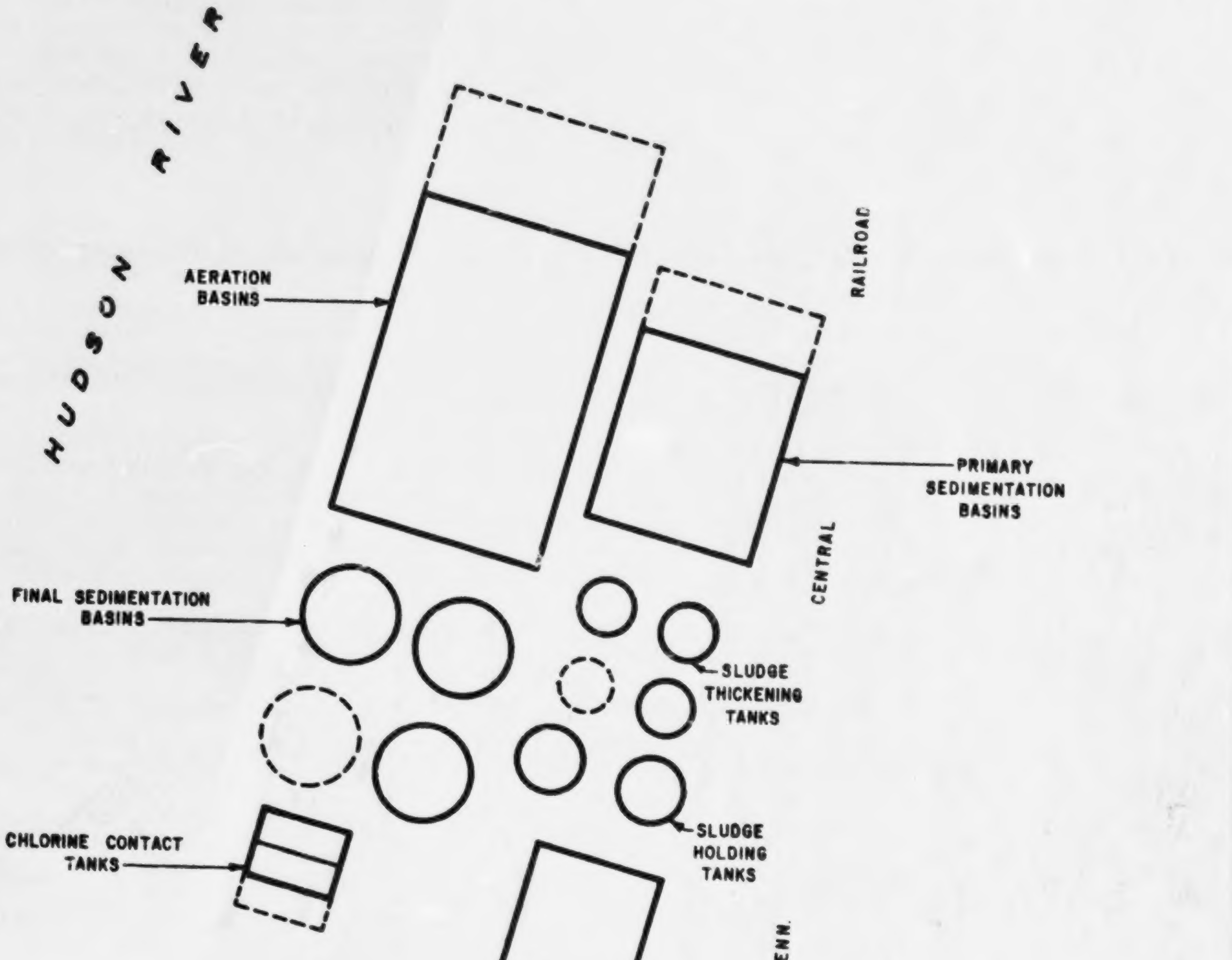
(The following document was presented by Mr. Wurtemberger for inclusion in the record:

RENSSELAER COUNTY
EXPANDED SEWER DISTRICT NO. 1
JUNE 1969)

RENSSELAER COUNTY

EXPANDED SEWER DISTRICT NO. 1

JUNE 1969


HUDSON RIVER
AERATION BASINS
RAILROAD
PRIMARY SEDIMENTATION BASINS
CENTRAL
FINAL SEDIMENTATION BASINS
SLUDGE THICKENING TANKS
SLUDGE HOLDING TANKS
CHLORINE CONTACT TANKS
PENN.
FILTRATION, INCINERATION ADMINISTRATION BUILDING
NIAGARA MOHAWK POWER CORP.

RENSSELAER COUNTY AGENCY
FOR ABATEMENT AND CONTROL
OF POLLUTION

COURT HOUSE, TROY, NEW YORK 12180

DIAL - 273-8825

Supervisor Richard W. Keeler
Chairman
Professor E. J. Kilcawley, P.E.
Dr. C. Fred Zipprich, Ch.E.
James J. Burke, P.E.
John P. Buckley, Ch.E.
Eugene L. Halsey Jr., P.E.
Donald B. Crowther, P.E.

Dear Resident:

In 1968, Rensselaer County Sewer District No. 1 was formed by action of the Board of Supervisors after a public hearing and approval by New York State Audit and Control. At the time District No. 1 was formed, this agency recommended that other districts be formed as soon as engineering studies were completed and approved. Subsequently, a request was received from East Greenbush and the City of Rensselaer for the agency to consider the feasibility of expanding District No. 1 facilities to receive waste from the southern part of North Greenbush, East Greenbush and the City of Rensselaer.

Your Rensselaer County Sewer Agency has completed its study of the pollution problems in this area. Based on the completed engineering studies and meetings with the municipalities and industries in the municipalities, we recommend the expansion of Sewer District No. 1 to include the entire Town of North Greenbush and the entire City of Rensselaer. The Town of East Greenbush will provide its own sewerage facilities by enlarging and upgrading its existing treatment plant.

Estimated costs to individual users are higher than estimated in 1967 as the result of the current strong inflationary trend and higher interest rates. However, individual costs for the expanded District are estimated to be less than costs would be for the existing district.

Additional information pertaining to the expanded sewer distric is included in this brochure.

At the public hearing to be held on the expansion of Rensselaer County Sewer District No. 1, we urge each resident to support this important program.

Very truly yours,

Richard W Keeler
RICHARD W. KEELER
Chairman

BACKGROUND

The need for adequate treatment of sewage and industrial waste discharges to the Hudson River in the vicinity of Troy and Rensselaer has been recognized for many years. The cities of Troy and Rensselaer, the Towns of North Greenbush and Brunswick and several industries in these communities are under orders by the Commissioner of the New York State Department of Health to conform to time schedules with respect to abatement of pollution.

Early in 1967 the Rensselaer County Board of Supervisors created a Rensselaer County Sewer Agency to prepare maps and plans for the establishment of a County Sewer District. In October 1968 Rensselaer County Sewer District No. 1 was created by action of the Board of Supervisors. This existing District includes the City of Troy and portions of the Towns of Schaghticoke, Brunswick, Sand Lake and North Greenbush.

Subsequently, at the request of the local municipalities and industries, a study was made of the feasibility of expanding the District to include the City of Rensselaer, the southern portion of the Town of North Greenbush and the western portion of the Town of East Greenbush. The County Agency, with the assistance of Malcolm Pirnie Engineers, has completed investigations, studies, and negotiations with the local communities and now recommends to the Board of Supervisors that the Rensselaer County Sewer District No. 1 be expanded to include all of the Town of North Greenbush and the City of Rensselaer. The Town of East Greenbush will not be in the expanded District, but plan to enlarge and expand its existing treatment facilities.

The current members of the Agency, each of whom is also a Commissioner of Sewer District No. 1, are listed below, each with a brief biographic sketch.

RICHARD W. KEELER
Brunswick, N. Y.;
Siena 1950 BBA Acctg;
US Army, World War II;
Supervisor, Town of Brunswick;
Purchasing Agent, John A.
Manning Paper Co. Inc.

PROF. E. J. KILCAWLEY, PE
Troy, N. Y.;
RPI 1928 CE,
RPI 1937 Master CE;
Prof. & Division Head 1938-64,
Sanitary & Environmental
Engineering;
Prof. Emeritus 1964 to date

C. FRED ZIPPRICH, PhD, PE
Troy, N. Y.;
RPI 1958 B Ch E;
Univ. of Minn. 1960 MPH;
RPI 1966 PhD;
Dept. Chairman, HVCC, Dept.
Public Health

JAMES J. BURKE, PE
Troy, N. Y.;
RPI 1937 B Ch E;
US Navy, World War II;
Chief Building Mechanical
Engineer — NYS Office of
General Services

JOHN P BUCKLEY
Troy, N. Y.;
RPI 1949 B Ch E;
US Navy Air Corps, World War II,
Korean War;
Supt, Bureau of Water and Sewers,
City of Troy, N. Y.

EUGENE L. HALSEY, JR., PE
No. Greenbush, N. Y.;
RPI 1939 CE;
US Army, World War II;
NYS Office of General Services,
Structural Design of Buildings

DONALD B. CROWTHER, PE
Sand Lake, N. Y.;
Northeastern Univ. 1932 IE,
NYS Thruway Authority,
Ass't Supt. Thruway
Maintenance — Buildings

DISTRICT LIMITS

The proposed expanded Rensselaer County District includes all of the City of Troy, the Pleasantdale-Speigletown section of Schaghticoke, most of the developed and soon to be developed areas in Brunswick and Sand Lake, all of North Greenbush and all of the City of Rensselaer.

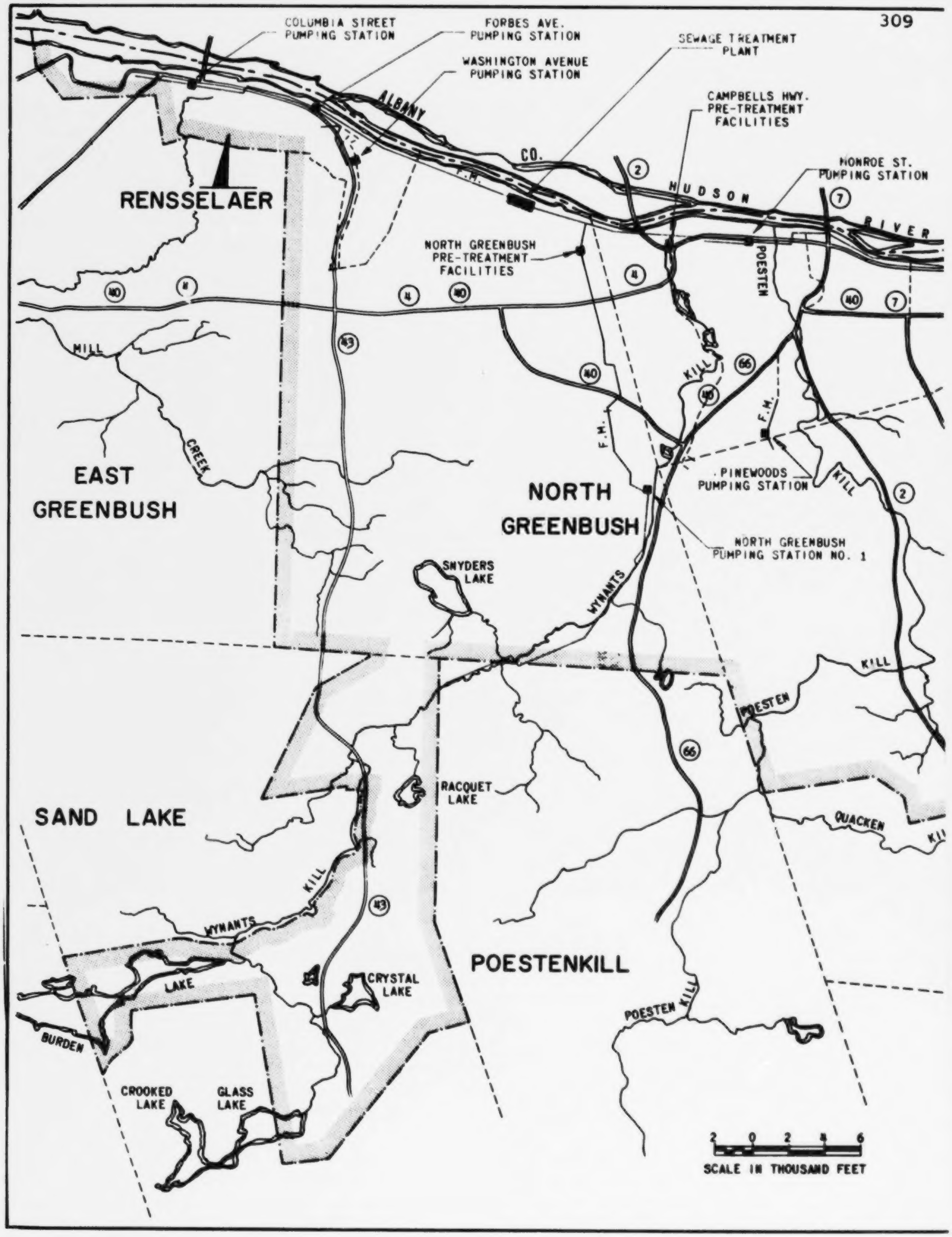
The limits of the Sewer District (see map) have been established so that all properties will ultimately be served by the interceptor sewers and treatment facilities are included in the District.

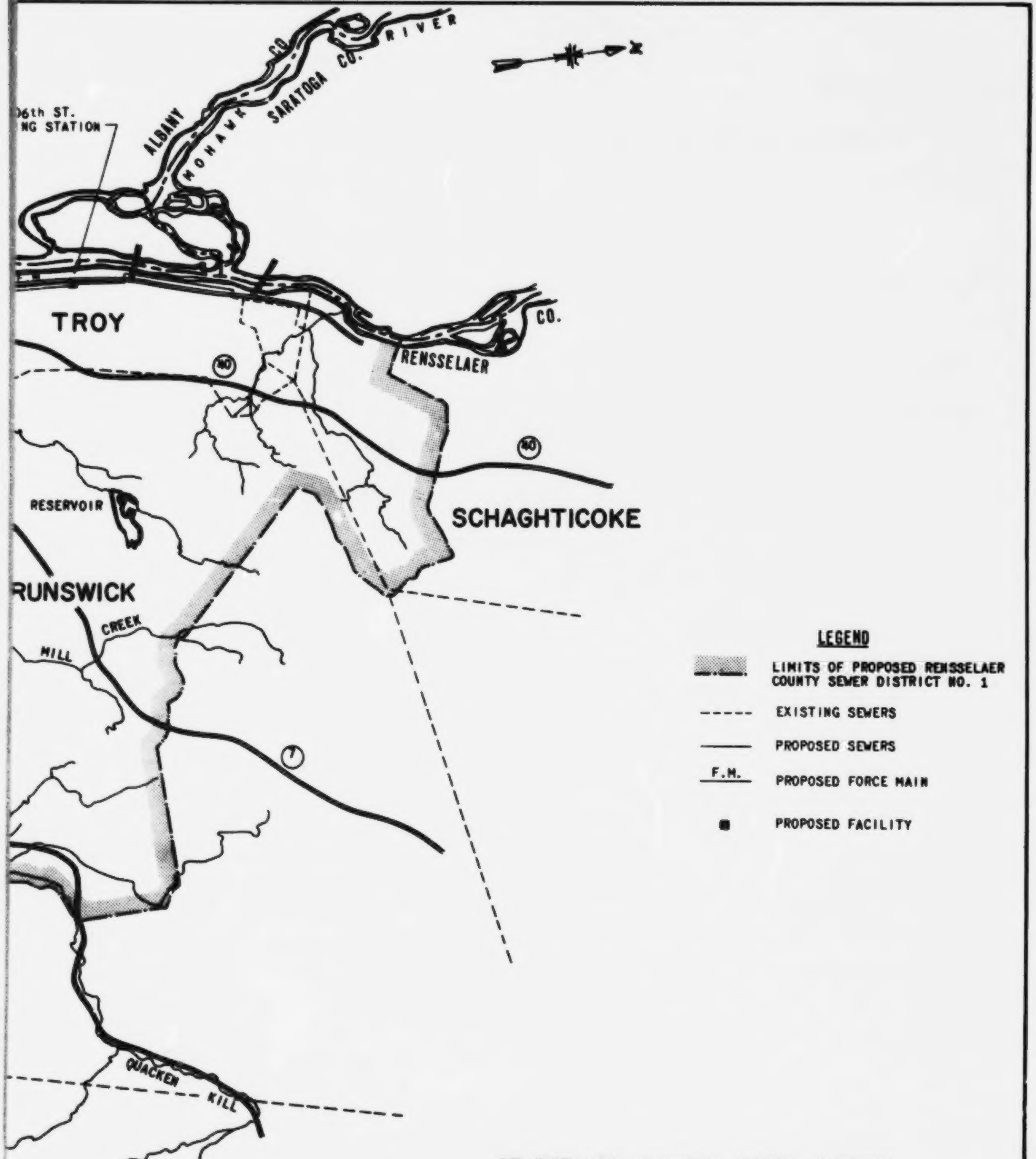
FACILITIES TO BE PROVIDED

Sewerage systems are made up of sewer collection systems, intercepting sewers, sewage pumping stations, force mains and treatment facilities. The proposed County Sewer District will provide only intercepting sewers, certain pumping stations and force mains and treatment facilities. The individual communities will provide the sewer collection systems.

Much of the developed portion of the proposed District already has sewer collection systems. When an unsewered area requires public sewers and arranges to build a collection system complete with lateral sewers and house connections, the appropriate District interceptor will be constructed to receive this waste. The locations of proposed District interceptor sewers are shown on the centerfold map.

All sewage in the District will be collected by the individual communities' collection systems and conducted by the proposed interceptor facilities to a treatment plant in a naturally isolated site to North Greenbush about 1½ miles south of Troy on the east bank of the Hudson River. As shown on the map, District facilities will include 118,000 feet of interceptor sewers and force mains plus several pumping stations and pretreatment facilities.


COLUMBIA STREET PUMPING STATION
FORBES AVE. PUMPING STATION
WASHINGTON AVENUE PUMPING STATION
SEWAGE TREATMENT PLANT
CAMPBELLS HWY. PRE-TREATMENT FACILITIES
MONROE ST. PUMPING STATION
ALBANY CO.
HUDSON RIVER
F.M.
RENSSELAER
NORTH GREENBUSH PRE-TREATMENT FACILITIES
POESTEN
2
7
40
4
43
66
MILL CREEK
KILL
EAST GREENBUSH
NORTH GREENBUSH
PINEWOODS PUMPING STATION
NORTH GREENBUSH PUMPING STATION NO. 1
SNYDERS LAKE
WYNANTS
POESTEN
QUACKEN KIL
RACQUET LAKE
SAND LAKE
WYNANTS KILL
POESTENKILL
CRYSTAL LAKE
LAKE
BURDEN
CROOKED LAKE
GLASS LAKE
POESTEN KILL
2 0 2 4 6
SCALE IN THOUSAND FEET


06th ST.
NG STATION
ALBANY
CO.
MOHAWK
SARATOGA CO.
RIVER
N
TROY
CO.
RENSSELAER
40
40
SCHAGHTICOKE
RESERVOIR
RUNSWICK
MILL
CREEK
7
QUACKEN
KILL
LEGEND
LIMITS OF PROPOSED RENSSELAER COUNTY SEWER DISTRICT NO. 1
EXISTING SEWERS
PROPOSED SEWERS
F.M.
PROPOSED FORCE MAIN
PROPOSED FACILITY

RENSSELAER COUNTY SEWER AGENCY

PROPOSED FACILITIES
RENSSELAER COUNTY SEWER DISTRICT No. 1

MAY 1969

PROJECT SCHEDULE

It is planned to implement the District as soon as possible in accordance with the following schedule:

June 1969	Public hearing called by Board of Supervisors
January 1970	Start ad valorem assessment
September 1970	Advertise for bids on first construction contract
November 1972	Completion of construction, start of operation

PROJECT COSTS AND CHARGES

The total District project is estimated to cost $32,100,000. Based on this cost the Federal and state grants are expected to be $18,360,000 leaving approximately $13,740,000 to be raised by a bond issue.

Total annual costs including the Capital carrying cost for a $13,740,000 Bond issue, administration, operation and maintenance are estimated to be about $1,763,000 in the first year of operation.

Annual costs will be supported by an ad valorem assessment on all property in the District plus a user charge for all properties which are actually using the District facilities. Wet industries will be charged in accordance with volume and characteristics of waste. It is planned that the first ad valorem assessment will be made in January 1970 and user charges will start on completion of construction.

BENEFITS

The benefits of a pollution control project are manifold. Dirty, contaminated water is a health hazard; its elimination is a necessity. Experience in other communities has been that the increase in property values which accompanies the installation of adequate sewerage facilities has been greater than the cost of the facilities. Real Estate development and industrial and commercial growth tend to flourish where waters are clean. In addition, the recreational value of cleaner water for fishing, boating and swimming is, in this age of greater leisure, a significant benefit.

WHAT IT WILL COST YOU

ANNUAL AD VALOREM ASSESSMENT
ALL PROPERTY IN DISTRICT

Community	Assessed Value	Rate per $1,000	Annual Ad Valorem Assessment
Rensselaer	$______	$0.44	$______
Troy	______	0.27	______
Brunswick	______	1.00	______
North Greenbush	______	0.95	______
Sand Lake	______	1.18	______
Schaghticoke	______	0.74	______

ANNUAL CHARGES FOR USERS

Annual Ad Valorem Assessment (See Above) $______

User Charge* ______

Total Payment to District $______

Local Sewer Charge ______

Total Annual Charge $______

---

*$32.50 per single family unit. Annual charge for multiple family, institutional, commercial, or industrial services will be $32.50 times the number of equivalent single family units. Charges to wet industries will be based on volume and characteristics of waste.

STATEMENT BY

MRS. CHARLES BEAN

CHAIRMAN DESIGNATE

NEW YORK STATE CITIZENS TIE-LINE

READ BY

MRS. ANN MAYNARD

MRS. MAYNARD: Mr. Stein, members of the panel, ladies and gentlemen:

I am very happy to make this statement for Mrs. Bean, whom I have worked with very closely all these past years.

Mrs. Bean is Chairman Designate of New York State Citizens Tie-Line, the volunteer arm of the Women's Unit of the Executive Chamber, the Capitol.

Tie-Line was created to encourage private citizens and public officials to work together towards solutions of State problems.

As an outgrowth of this function, particularly well-qualified members of Citizens Tie-Line participated in a four-part Seminar on Environmental Health which emphasized problems of water pollution and progress toward their solution. The purpose of the Seminar was to enable the participants to function effectively as speakers and resource people within their own communities. The Seminar, which was taught by water, air and solid waste experts from the New York State Department of Health, and under the overall guidance of Mrs. Anna Maynard and Mrs. Mary Armstrong, staff public health educators, provided an intensive look at what has actually been accomplished and what is planned by the New York State Pure Waters Program and other State environmental health programs. The Speakers can now from their own knowledge and experience demonstrate to all interested citizens and groups that real progress has been made toward controlling pollution. It is their further purpose to educate the public at large by creating public awareness about past accomplishments and future plans. They have also been prepared to and have undertaken major conference planning functions. They, thus, serve not only as liaison between the Health Department and the community at large but also as an integral part of an Environmental Health program.

One example of what we have done will serve to demonstrate the value of citizen participation in water pollution control enforcement.

Our Albany County Leader (Mrs. Raymond Marinelli), a Seminar graduate, addressed the Delmar Progress Club, as an advocate of a proposed sewer district expansion. The referendum involved a $10,000,000 expenditure and was one of the first to pass in the Albany Region which was remarkable in light of expressed voter disapproval of many types of expenditure.

Since the proposed district expansion area involved several communities under citation, the availability and participation of a lay expert from a citizen's organization to speak to local community groups was a key factor in educating the concerned taxpayers to the need for a favorable referendum vote.

This experience demonstrates that a well informed and positively motivated citizen can often be more effectively persuasive than the most impressive technical expert.

We from Tie-Line have been happy to cooperate with a Health Educator who recognizes the importance of citizen participation in community education programs, particularly in such critical areas as the recent referendum.

We have also been very gratified to be

able to provide staff help for major environmental health conferences and to provide general background speakers in the Pure Waters Program. We recognize the importance of creating a well-informed citizenry who may at a future time be a constructive force not only in the passage of referenda but also in forming a climate of opinion which helps persuade private industry to cooperate with the Pure Waters Program.

Thank you.

MR. STEIN: Thank you.

Are there any comments or questions?

(No response)

MR. STEIN: If not, thank you very, very much.

MR. METZLER: This group of women has been particularly helpful, certainly in New York State, and we are very grateful for their leadership and for their good statement.

MR. STEIN: I love it. You know, there is nothing like these seminar graduates. Mostly I have to depend on MIT graduates, like Lester (laughter).

MR. METZLER: I have no comment.

We would like, if it is possible then, to move ahead with the statement by the New York State Health Department.

Paul Eastman, who is the Assistant Commissioner, will make the presentation.

STATEMENT BY
MR. PAUL W. EASTMAN
ASSISTANT COMMISSIONER
DIVISION OF PURE WATERS
NEW YORK STATE DEPARTMENT OF HEALTH

MR. EASTMAN: Mr. Stein, conferees and ladies and gentlemen:

I am Paul Eastman, the Assistant Commissioner for the Division of Pure Waters of the New York State Department of Health.

In addition, we have with us from the Department the Chief Engineer for the office of New York Affairs, Mr. Albert Machlin, and his associate, Mr. Charles Miles. We also have the regional engineer for the White Plains Region, Mr. John E. Harrison, and we have from Albany headquarters, Mr. Donald Stevens, the director of the Bureau of Water Quality Management.

This progress report summarizes the status of pollution abatement and control in the watersheds of the Hudson River extending from the Battery to the Federal Lock at Troy, New York, and the interstate tributaries comprising the waters of the Newark Bay, the Arthur Kill, the East and Harlem Rivers and the Upper Bay of New York Harbor. The problems associated with the pollution of interstate waters under consideration at this conference pertain primarily to discharges of raw and inadequately treated municipal and industrial wastes. The following represents a brief summary of New York State's water pollution control programs and activities; detailed information as of May 15, 1969,is appended.

MR. STEIN: It will be included in the record as if read without objection.

MR. EASTMAN: Enforcement

A total of 50 orders or stipulations have been issued by the Commissioner of Health containing a time schedule for providing remedial works by 1972 for all discharges violating quality standards and provisions of the water pollution control law. A total of six polluters have been notices for hearings to establish Commissioner's Orders and voluntary schedules have been reached with respect to 101 sources of waste discharges.

Details regarding individual polluters are summarized in Appendix A.

An investigatory hearing was held by the State Department of Health in March 1969, to consider whether the City of New York would be able to adhere to the construction schedule submitted to the Department of Health in December 1968. Pertinent correspondence resulting from the hearing addressed to city officials by the Commissioner of Health is contained in Appendix A. New York City representatives will discuss at this conference the City's progress in the program outlined in the December 1968 schedule.

Comprehensive Sewerage Studies

Thirty-four area wide sewer collection and treatment facility studies have been supported by 100 per cent State grants to municipalities, representing a total amount of about $2,800,000. Twenty projects recommended by these studies are either being implemented or are being considered for implementation by local officials. Details regarding these studies are summarized in Appendix B.

Permit Issuance - Municipal & Industrial Treatment Facilities

A total of 44 municipal and industrial

waste treatment proposals have either been approved or are under review. Approval of plans and permit issuance are preconditions for State municipal construction grants. Details regarding municipal proposals submitted since 1965 are listed in Appendix C; industrial proposals in Appendix D.

Construction Grants

A total of 37 municipal projects have been completed, are under construction or will be placed under construction within the year. State grants are by far the major assistance to municipalities because appropriations have been far short of authorizations for the Federal construction grants. More than $400 million construction works eligible for State and Federal assistance are involved.

New York will contribute nearly $220 million in grant funds whereas Federal grants will total only approximately $23 million. Details regarding individual projects are contained in Appendix E.

Operation and Maintenance

Municipalities operating sewage treatment faciliites in a manner acceptable to the Commissioner of Health are reimbursed to the extent of one-third the cost of operating and maintaining these facilities; approximately $9,460,200 of a total eligible cost of $36,960,258 have been approved for payment. Ten applications were denied because of failure to comply with the rules and regulations promulgated by the Commissioner. Further details are summarized in Appendix F.

Standards and Surveillance

State programs to control and abate pollution of waters in the Hudson River recognize changing conditions resulting from industrial and population growth including the increased use of the river for water supply. At the recommendation of the Health Department, the Water Resources Commission held a public hearing and upgraded to Class A (water supply) a 44 mile stretch of river from the vicinity of Hyde Park to Coeymans.

The Commission, at the Health Department's recommendation, held a series of hearings to obtain comments and suggestions regarding thermal criteria developed by a Task Force of State representatives; these criteria together with rules and regulations are expected to be presented to the State Water Resources

Commission for approval at a special meeting on July 2, 1969.

In addition to the programs of standards and classifications, the State maintains a monitoring network to provide information regarding water quality. A total of 12 Hudson River stations are sampled at a weekly to monthly frequency; details regarding the program are summarized in Appendix G.

Water Quality Evaluation

A mathematical model depicting the physical, biological, hydrological and chemical interrelationships of the Hudson River from the Battery to the lock at Troy will be completed by the end of 1969. This engineering tool provides a capability to assess effects of waste discharges upon water quality taking into consideration projected population and industrial growth. Information provided by the consulting engineers developing the model has been used in evaluating proposed projects located in the Hudson watershed.

Research

Projects carried on both in house and under contract will be useful in coping with pollution problems in the Hudson River Basin. The "Hudson River Biological Monitoring System" which is nearing completion consists of four biological monitoring stations in fresh water and marine environment. The organisms contained in these stations after filtering the surface waters are subject to periodic sampling and quantitative study of organic and inorganic contaminates such as insecticides, radioactive substances and trace elements. The results of this effort will provide another tool to evaluate water quality.

Conclusion

The Hudson River watershed represents a major area of population and industrial development. Water uses recognized by the classes assigned to these waters include public water supply, bathing, fishing, shellfishing and other uses.

New York State's water pollution control programs are directed to providing known methods of waste treatment and to maintaining quality standards in the receiving waters consistent with the classes assigned to these waters by the State Water Resources Commission taking cognizance of other standards applying to interstate and boundary waters.

The State, its municipalities and industries have contributed and will continue to contribute vast sums of money to prevent and control pollution in the Hudson River watershed. An equivalent effort is needed on the part of the Congress and the Federal Executive Branch not only to fulfill their promises for financial assistance for construction of municipal waste treatment facilities but also to control pollution from Federal sources.

The abatement of pollution from the Watervliet Arsenal represents a step forward. However, the reported diversion to other uses of approved funds to construct secondary treatment facilities at the U. S. Military Academy is a step backward and a disconcerting precedent. Correction of this problem would set a good example for other polluters to follow. It along with appropriation of the full amount authorized for Federal construction grants would represent action comparable to that expected of State and local governmental entities.

APPENDIX A

ENFORCEMENT STATUS

May 15, 1969

HUDSON RIVER BASIN

Table Explanation

Location - municipal subdivision location of non-municipal entities. (T) - Town; (V) - Village; (c) - City.

Pop. or flow - 1960 census population of community if known, residency and employment of institution, or industrial waste flow of corporation.

Abatement Status

A - Under Commissioner's Orders

B - Hearing noticed to established Commissioner's Order

C - Hearing to be noticed during 1969

D - Under Department directive (voluntary compliance)

E - Identified as polluter

1. Identified
2. Initial conference held
3. Schedule established
4. Solution established via preliminary report approval (including special study)
5. Final plans submitted and approved
6. Under construction
7. Completion of construction, installation of facilities or internal modifications.
8. Abatement partially achieved

9. Abatement achieved

Construction completion deadline

(2) No schedule established

Compliance with Commissioner's Order or Voluntary Schedule

1. Compliance with schedule

2. Technical non-compliance with schedule, but progress deemed satisfactory

3. Non-compliance with schedule, progress unsatisfactory.

* * *

WASTE SOURCE	LOCATION	RECEIVING WATER	EFFLUENT RAW OR PRIMARY	EFFLUENT TYPE	POP. OR FLOW	ABATEMENT STATUS	COMPLETION DEADLINE	COMPLIANCE
SARATOGA COUNTY								
N. Side S.D.	Waterford (T)	Mohawk R.	Raw	Sanitary	2000	- A-3	11/1/69	2
Mohawk Paper Mill	Waterford (T)	Mohawk R.	Raw	Paper	1 mgd	A-3	7/1/69	2
Cluett-Peabody	Waterford (T)	Mohawk R.	Raw	Textile	1.5 mgd	A-4	11/1/69	2
RENSSELAER COUNTY								
Troy (C)		Hudson R.	Raw	Sanitary	67492	A-4	4/1/71	2
Rensselaer (C)		Hudson R.	Raw	Sanitary	10506	A-4	2/1/70	2
Huyck Corporation	Rensselaer (C)	Hudson R.	Raw	Felt	0.3 mgd	A-4	2/1/70	2
Sterling Drug	Rensselaer (C)	Hudson R.	Raw	Pharmac.	2.4 mgd	A-4	1/1/70	2
General Aniline	Rensselaer (C)	Hudson R.	Raw	Dyes	4.4 mgd	A-4	1/1/70	2
Brown Paper Co.	Castleton (V)	Hudson R. Trib.	Raw	Paper	1.4 mgd	A-3	7/1/70	2
Brunswick (T)		Hudson R.	Raw	Sanitary	3320	A-4	1/1/71	2
N. Greenbush (T)		Hudson R.	Raw	Sanitary	3000	-A-4	1/1/71	2
Castleton (V)		Hudson R.	Raw	Sanitary	1752	A-3	2/1/70	2
Republic Steel Co.	Troy (C)	Hudson R.	Raw	Solids Phenols & Cyanides	2.4 mgd	B-1	(2)	
ALBANY COUNTY								
Cohoes (C)		Mohawk R.	Raw	Sanitary	20129	A-4	1/1/71	2

WASTE SOURCE	LOCATION	RECEIVING WATER	EFFLUENT RAW OR PRIMARY	EFFLUENT TYPE	POP. OR FLOW	ABATEMENT STATUS	COMPLETION DEADLINE	COMPLIANCE
Mohawk Paper Mills	Cohoes (C)	Hudson R. Trib.	Raw	Paper	1.2 mgd	A-4	1/1/69	2
Green Island (V)		Hudson R.	Raw	Sanitary	3533	A-4	1/1/70	2
Manning Paper Co.	Green Island (V)	Hudson R.	Raw	Pulp & Paper	7.4 mgd	A-4	4/1/70	2
Maplewood S.D.	Colonie (T)	Hudson R.	Primary	Sanitary	2500	A-4	7/1/69	2
Norton Co.	Watervliet (C)	Hudson R.	Raw	Adhesive	0.39 mgd	A-4	9/1/69	1
Latham S.D.	Colonie (T)	Hudson R. Trib.	Primary	Sanitary	7200	A-5	7/1/69	2
Watervliet (C)		Hudson R.	Raw	Sanitary	13917	A-4	1/1/70	2
Watervliet Arsenal	Watervliet (C)	Hudson R.	Raw	Plating	.03 mgd	D-6	1/1/69	2
Allegany Ludlum	Colonie (T)	Hudson R. Trib.	Raw	Metal Fin.	1.4 mgd	A-4	4/1/70	2
Menands (V)		Hudson R.	Raw	Sanitary	2314	A-4	1/1/70	2
Alb.-Sch. Rd. S.D.	Colonie (T)	Hudson R. Trib.	Primary	Sanitary	9000	A-4	1/1/70	2
W. Albany S.D.	Colonie (T)	Hudson R. Trib.	Raw	Sanitary	600	A-4	1/1/70	2
McKownville S.D.	Guilderland (T)	Hudson R. Trib.	Raw	Sanitary	1000	A-4	1/1/70	2
Albany (C)		Hudson R.	Raw & Primary	Sanitary	129726	A-4	1/1/71	2
Tobin Packing Co.	Albany (C)	Hudson R. Trib.	Raw	Slaugh & Packing	0.67 mgd	A-4	7/1/70	2
Delmar-Elsmere S.D.	Bethlehem (T)	Hudson R. Trib.	Primary	Sanitary	1200	A-4	9/1/70	2

WASTE SOURCE	LOCATION	RECEIVING WATER	EFFLUENT RAW OR PRIMARY	EFFLUENT TYPE	POP. OR FLOW	ABATEMENT STATUS	COMPLETION DEADLINE	COMPLIANCE
Ravena (V)		Hudson R. Trib.	Primary	Sanitary	2410	A-5	1/1/70	2
Coeymans (H)	Coeymans (T)	Hudson R. Trib.	Raw	Sanitary	800	A-5	1/1/70	2
Penn Central	Bethlehem (T)	Hudson R.	Secondary	Oil & Sanitary	.20 mgd	D-8	7/1/69	1
Carr Packing Co.	Cohoes (C)	Hudson R.	Raw	Packing	N.A.	E-4	(2)	*
Selkirk (H)	Bethlehem (T)	Hudson R. Trib.	Raw	Sanitary	200	E-4	(2)	**
Star Textile	Cohoes (C)	Hudson R.	Raw	Textile	0.15 mgd	E-4	(2)	*
GREENE COUNTY								
Catskill (V)		Hudson R.	Raw	Sanitary	5825	A-4	10/1/69	2
Athens (V)		Hudson R.	Raw	Sanitary	1754	A-4	1/1/69	2
Coxsackie (V)		Hudson R.	Raw	Sanitary	2849	A-3	8/1/72	1
COLUMBIA COUNTY								
Clermont Fruit	Clermont (T)	Hudson R. Trib.	Raw	Cannery	.02 mgd	A-6	4/1/69	2
DUTCHESS COUNTY								
Hudson R. State Hospital	Poughkeepsie (C)	Hudson R.	Primary	Sanitary	7100	D-3	8/1/74	1
Poughkeepsie (C)		Hudson R.	Primary	Sanitary	45,000	B-4	8/1/74	1
Beacon (C)		Hudson R.	Primary	Sanitary	6000	A-4	5/1/69	2

* Will connect to the Albany Co. Sewer District before 1973.

** Will be included in the expanded Delmar-Elsmere Sewer District before 1973.

WASTE SOURCE	LOCATION	RECEIVING WATER	EFFLUENT RAW OR PRIMARY	EFFLUENT TYPE	POP. OR FLOW	ABATEMENT STATUS	COMPLETION DEADLINE	COMPLIANCE
Three Star Anodizing	Wappingers Falls (V)	Fishkill Creek	Raw	Plating & Sanitary	.1 mgd	E-1	(2)	***
Texaco	Fishkill (T)	Fishkill Creek	Primary	Sanitary & Oil	.3 mgd	D-4	10/1/70	1
Arlington S.D.	Poughkeepsie (T)	Hudson River	Primary	Sanitary	2200	D-6	7/1/69	2
W. Lithograph Co.	Poughkeepsie (C)	Hudson River	Primary	Paper	N.A.	D-3	8/1/74	1
Wappingers Falls (V)		Wappingers Ck.	Primary	Sanitary	3412	D-4	5/1/70	1
Matteawan State Hospital	Beacon (C)	Fishkill Creek	Primary	Sanitary	0.7 mgd	D-4	6/1/71	1
Beacon Piece Dye	Beacon (C)	Fishkill Creek	Raw	Dye	1 mgd	B-3	1/1/71	1
Braendly Piece Dye & Finishing	Beacon (C)	Fishkill Creek Hudson R.	Raw Primary	Dye & Sanitary	.8 mgd	B-3	1/1/71	1
PUTNAM COUNTY								
ColdSpring (V)		Hudson R.	Raw	Sanitary	2000	A-5	5/1/69	3*
Sonotone Corp.	Coldspring (V)	Hudson R.	Raw	Sanitary	.15 mgd	A-6	9/1/69	1
ULSTER COUNTY								
New Paltz (V)		Wallkill R.	Primary	Sanitary	3000	D-5	3/1/69	2**
Cantine Paper	Saugerties (V)	Esopus Creek	Raw	Paper	N.A.	E-2	(2)	***
Wallkill (V)		Wallkill R.	Primary	Sanitary	1215	D-3	2/1/70	2
Kingston (C)		Roundout R.	Primary	Sanitary	3.5 mgd	D-4	12/1/69	2

* Being referred to Attorney General for legal action.
** Construction to begin in 1969.
*** Attempting to obtain evidence of standards contravention.

WASTE SOURCE	LOCATION	RECEIVING WATER	EFFLUENT RAW OR PRIMARY	EFFLUENT TYPE	POP. OR FLOW	ABATEMENT STATUS	COMPLETION DEADLINE	COMPLIANCE
Saugerties (V)		Esopus Creek	Primary	Sanitary	0.5 mgd	D-4	2/1/70	2
Highland S.D.	Lloyd (T)	Hudson R.	Primary	Sanitary	.2 mgd	D-4	12/1/69	2
ORANGE COUNTY								
Newburgh (C)		Hudson R.	Raw	Sanitary	33000	A-6	12/1/69	2
Majestic Weaving	Cornwall (T)	Moodna Creek	Raw	Textile	1.0 mgd	A-4	10/1/68	2
Cornwall Paper Co.	New Windsor (T)	Moodna Creek	Raw	Paper	0.6 mgd	A-4	9/1/70	2
New Windsor S.D. #2	New Windsor (T)	Moodna Creek	Primary	Sanitary	2000	D-6	10/1/68	2
Highland Falls (V)		Hudson R.	Primary	Sanitary	4000	E-4	(2)	*
American Felt Co.	New Windsor (T)	Quassic Creek	Raw	Textile	0.3 mgd	A-5	10/1/68	2**
Walden (V)		Wallkill R.	Primary	Sanitary	4851	D-7	7/1/69	1
Montgomery (V)		Wallkill R.	Primary	Sanitary	0.12 mgd	E-2	(2)	*
Silver Lake Mechanicstown S.D.	Wallkill (T)	Wallkill R.	Primary	Sanitary	0.15 mgd	E-4	(2)	*
ROCKLAND COUNTY								
Rock Industries	Haverstraw (T)	Hudson R.	Primary	Agregate	1.2 mgd	E-8	(2)	
Haverstraw (V)		Hudson R.	Primary	Sanitary	5616	A-4	12/1/71	1
W. Haverstraw (V)		Hudson R.	Primary	Sanitary	6800	A-5	5/1/69	1
Elk Piece Dye Works	Garnerville (V)	Hudson R. Trib.	Raw	Textile & Sanitary		B-4	(2)	***
E & S Finishing Co.	Garnerville (V)	Hudson R. Trib.	Raw	Textile & Sanitary		B-4	(2)	***

* Recently constructed primary treatment facility; no stream standards contravened.
** Will connect to interceptor that will be constructed by May 1970.
*** Negotiating for participation in regional system.

WASTE SOURCE	LOCATION	RECEIVING WATER	EFFLUENT RAW OR PRIMARY	EFFLUENT TYPE	POP. OR FLOW	ABATEMENT STATUS	COMPLETION DEADLINE	COMPLIANCE
Kay Fries Chem.	Stony Pt. (T)	Hudson R.	Primary	Chemical	0.5 mgd	A-4	12/1/67	2*
Upper Nyack (V)		Hudson R.	Primary	Sanitary	2010	E-4	(2)	**
Nyack (V)		Hudson R.	Primary	Sanitary	5195	E-4	(2)	**
South Nyack (V)		Hudson R.	Primary	Sanitary	3400	E-4	(2)	**
Continental Can Co.	Piermont (V)	Hudson R.	Primary	Paper	3.5 mgd	A-5	12/1/68	2***
Letchworth School	Haverstraw (T)	Hudson R. Trib.	Primary	Sanitary	5200	D-4	12/1/71	1
NYS Rehab. Hosp.	W. Haverstraw (T)	Hudson R.	Primary	Sanitary	.2 mgd	D-4	12/1/71	1
U.S. Gypsum Co. Rockland Co. S.D.	Grassy Pt.	Hudson R.	Primary	Sanitary	N.A.	D-4	9/1/69	1
		WESTCHESTER COUNTY						
Peekskill (C)		Hudson R.	Primary	Sanitary	4 mgd	A-4	9/1/72	1
Cortland Stone Co.	Peekskill (C)	Hudson R.	Raw	Washings	.02 mgd	D-4	6/1/70	1
Standard Brands Co.	Peekskill (C)	Hudson R.	Raw	Sanitary & Fermentation	.05 mgd 1.0 mgd	A-4	5/1/68	2****
Ednalite Optical	Peekskill (C)	Hudson R.	Raw	Abrasives	.05 mgd	D-4	6/1/70	2
Penn Central R.R.	Croton (V)	Hudson R.	Primary	Sanitary & Locomotive Washings	0.2 mgd	A-6	5/1/68	2*****
Croton-on-Hudson (V)		Hudson R.	Primary	Sanitary	6800	D-4	8/1/73	2
Water St. STP	Ossining (V)	Hudson R.	Primary	Sanitary	15000	D-4	8/1/73	1
Liberty St. STP	Ossining (V)	Hudson R.	Primary	Sanitary	3000	D-4	8/1/73	1

* Considering connection to Town Plant; ** Included in Orangetown (T) Sewer District; will connect to District Plant; *** Construction of company plant to start in 1969; **** Evaluating construction of Company plant vs connection to Peekskill (C) system; ***** Will connect to County system; additional oil separators being installed.

WASTE SOURCE	LOCATION	RECEIVING WATER	EFFLUENT RAW OR PRIMARY	EFFLUENT TYPE	POP. OR FLOW	ABATEMENT STATUS	COMPLETION DEADLINE	COMPLIANCE
Sing Sing Prison	Ossining (V)	Hudson R.	Primary	Sanitary	2000	D-8	8/1/73	1
Scarborough STP	Briarcliff (V)	Hudson R.	Primary	Sanitary	1000	D-4	8/1/73	1
River Road STP	Briarcliff (V)	Hudson R.	Primary	Sanitary	200	D-4	8/1/73	1
Chevrolet GM	Tarrytown (V)	Hudson R.	Primary	Paint spray	0.5 mgd	D-4	8/1/73	1
N. Tarrytown (V)		Hudson R.	Primary	Sanitary	9900	D-4	1/1/72	1
Tarrytown (V)		Hudson R.	Primary	Sanitary	11000	D-4	1/1/72	1
Irvington (V)		Hudson R.	Primary	Sanitary	.7 mgd	D-4	1/1/72	1
Blind Brook S.D.		Hudson R.	Primary	Sanitary	410,000	A-4	1/1/72	1
Yonkers S.D.		Hudson R.	Primary	Sanitary	410,000	A-4	1/1/72	1
New Rochelle S.D.		Hudson R.	Primary	Sanitary	410,000	A-4	1/1/72	1
Hudson Wire Co.	Ossining (V)	Hudson R. Trib.	Primary	Chemical	0.6 mgd	A-4	6/1/70	2
General Mills	Ossining (V)	Hudson R. Trib.	Raw	Pharmac.	.001 mgd	D-4	8/1/73	1
Refined Syrups & Sugar, Inc.	Yonkers (C)	Hudson R.	Primary	Sanitary & Sugar	0.8 mgd	A-6	8/1/69	2

New York City Area

Discharge into Hudsoh River, Harlem River, East River, Upper and Lower Bay and the Kill Van Kull

MUNICIPAL DISCHARGES

Wards Island - Manhattan

SCH Stipulation calls for completion of construction by April 1971. Making satisfactory progress, abatement partially achieved through construction of treatment facilities.

North River - Manhattan

SCH Stipulation calls for completion of construction by February 1972. Plant is presently being redesigned for step aeration.

Newtown Creek - Brooklyn

SCH Stipulation calls for completion of construction by January 1969. Making satisfactory progress, abatement partially achieved through construction of treatment facilities.

Red Hook - Brooklyn

SCH Stipulation calls for completion of construction by December 1971. Wastewater Facilities Report being prepared.

Owl's Head - Brooklyn

SCH Stipulation relates only to chlorination facilities with a completion deadline of May 1968. Compliance with this due date is unknown. Wastewater Facilities Report under review, making satisfactory progress.

Port Richmond - Staten Island

SCH Stipulation calls for completion of construction by December 1970. Wastewater Facilities Report approved, making satisfactory progress.

Oakwood Beach - Staten Island

SCH Stipulation calls for completion of construction by December 1971. Making satisfactory progress. Awaiting submission of wastewater facilities report.

Tottenville - Staten Island

SCH Stipulation calls for completion of construction by July 1970. Making satisfactory progress. Awaiting submission of wastewater facilities report.

INDUSTRIAL POLLUTERS

Table Explanation

Location - municipal subdivision

Priority 1. Major importance - large polluter, key polluter, polluting substance highly toxic, sensitive receiving stream flow or quality-wise.

2. Normal importance - polluters between Categories 1 and 3.

3. Minor importance - small polluter, large stream, low classification, minor pollutional impact on stream, i.e., small septic tank discharge to large stream.

Abatement Status	1. Identified (Abatement Plan) 2. Initial Conference held 3. Schedule established 4. Solution established via preliminary report approval (including special study) 5. Final plans submitted and approved 6. Under construction 7. Completion of construction, installation of facilities of internal modifications 8. Abatement partially achieved 9. Abatement achieved
Compliance	1. Compliance with schedule 2. Technical non-compliance with schedule, but progress deemed satisfactory 3. Non-compliance with schedule, progress unsatisfactory

NEW YORK CITY

INDUSTRIAL WASTES

WASTE SOURCE	LOCALITY	PRIORITY	ABATEMENT STATUS	COMPLIANCE
Greenpoint Dye Works	Brooklyn	1	1	2
Good Humor	Brooklyn	1	1	2
Washburn Wire Company	Manhattan	1	1	2
Diamond Print Works	Brooklyn	1	1	2
Manhattan Adhesive Corporation	Brooklyn	1	4	2
Pepsi Cola Company	Queens	1	4	2
American Sugar Refining Company	Brooklyn	1	4	2
Nassau Smelting and Refining	Staten Island	1	4	2
Proctor & Gamble	Staten Island	1	6	1
F & M Schaefer Brewery	Brooklyn	1	8	1
D.D. Williamson and Co., Inc.	Queens	2	1	2
American Molasses	Brooklyn	2	1	2
Pussy Cat Food	Queens	2	1	2
Triplex Oil Refining	Queens	2	1	2
Metropolitan Petroleum	Bronx	2	1	2
Metropolitan Petroleum	Brooklyn	2	2	2
Consolidated Edison, Huda	Brooklyn	2	1	2
Colsolidated Edison, Kent	Brooklyn	2	1	2

WASTE SOURCE	LOCALITY	PRIORITY	ABATEMENT STATUS	COMPLIANCE
Consolidated Edison, 20th Street	Manhattan	2	1	2
Consolidated Edison, 35th Street	Manhattan	2	1	2
Consolidated Edison, 59th Street	Manhattan	2	1	2
Consolidated Edison, 45th Avenue	Queens	2	1	2
Consolidated Edison, 14th Avenue	Manhattan	2	1	2
Consolidated Edison, 14th Street	Manhattan	2	1	2
Fort Jay	Brooklyn	2	1	2
Pinkas-Fischer	Brooklyn	2	1	2
Irving Subway Grating	Queens	2	2	1
Phelps Dodge Corporation	Queens	2	2	2
White Rock Beverages	Queens	2	2	2
Van Iderstine Company	Queens	2	2	2
Peerless Oil & Chemical	Queens	3	1	2
Whale Oil Corporation	Manhattan	3	1	2
Filter Petroleum Products	Brooklyn	3	1	2
Atlantic Paste	Brooklyn	3	1	2
Jayem Manufacturing Corporation	Brooklyn	3	1	2
Packers Prepack	Brooklyn	3	1	2
Thrifty Paper	Brooklyn	3	1	2
Zenith Steel	Brooklyn	3	1	2
Alloy Realty	Queens	3	1	2

WASTE SOURCE	LOCALITY	PRIORITY	ABATEMENT STATUS	COMPLIANCE
Fulton Fish Market	Manhattan	3	1	2
New York City Poultry Market	Queens	3	1	2
McInnis Iron Works	Queens	3	1	2
St. Parks Metal*	Queens	3	1	2
Mariners Harbor Industrial Park	Staten Island	3	1	2
Gifford Oil Company	Brooklyn	3	1	2
Gulf Oil Corporation	Richmond	3	1	2
Mobil Oil Company	Brooklyn	3	1	2
Premium Coal & Oil Company	Brooklyn	3	1	2
James Thompson and Sons and Colprovia Corporation	Staten Island	3	1	2
American Oil Company	Brooklyn	3	1	2
Liebros Casting Company, Inc.	Queens	3	1	2
Abrasive Blast Cleaning Corp.	Queens	3	1	2
Colonna and Company, Inc.	Queens	3	1	2
Brewer Dry Dock	Staten Island	3	1	2
Colonial Sand & Stone Company	Brooklyn	3	1	2
Principe-Danna, Inc.	Queens	3	1	2
Mobil Oil Company	Staten Island	3	1	2

*Should be St. Marks

WASTE SOURCE	LOCALITY	PRIORITY	ABATEMENT STATUS	COMPLIANCE
Kentile Floors	Brooklyn	3	1	2
Brooklyn Union Gas Company	Brooklyn	3	1	2
N.Y. Shipyard USNR	Brooklyn	3	1	2
N.Y. Central System	Bronx	3	1	2
Marilyn Warehourse*	Queens	3	1	2
Horowitz Brothers and Margareten	Queens	3	1	2
Boro Valve Company	Queens	3	2	2
Sinclair Refining	Queens	3	2	2
U.S. Gypsum Company	N. Brighton	3	9	1

*Should be Marlyn

May 8, 1969

Dear Mayor Lindsay:

Enclosed is a report of the hearing I convened on the Water Pollution Abatement Program for the City of New York on March 25 and 26. Our conclusion is that compliance with the construction start and completion dates in the schedule submitted by letter of December 27, 1968, from Doctor Merril Eisenbud, Administrator of the Environmental Protection Administration, is possible if extraordinary measures are taken for its implementation by all entities of the City government.

I am particularly concerned with the conclusion of the hearing officer as set forth in Items 41, 42, 43 and 47. The necessity for a firm financial commitment to the program is obvious. In addition, a resolution of the Common Council, setting forth a definite time schedule for the program of improvement to existing sewage treatment plants is required for continued eligibility for state payments for the operation and maintenance of these plants (10 NYCRR, 44.55(e)).

In order to get these plants under construction, certain measures will have to be implemented in addition to the firm financial commitment.

These are:

1. Especially expeditious processing of construction contracts, 102 awards of which are scheduled for peak fiscal years of 1969-70 and 1970-71. This is a significant increase over the number of awards for comparable purposes in the past and will require additional resources and effort to handle.
2. Special arrangements to obtain contractors with sufficient skilled labor to perform a volume of construction far in excess of that normally required and easily available.
3. Action to assure that the consulting engineering firms which are preparing the preliminary and final designs for the treatment plants and allied facilities complete their work on schedule.
4. Provision for adequate supervision and inspection of the great volume of construction scheduled. The required number of qualified inspectors is not

available in the staff of the Environmental Protection Administration nor from the consulting engineering firms retained by the City, nor are they otherwise readily obtainable.

My staff and I would be glad to meet with you if you have questions. I look forward to hearing from you.

Sincerely yours,

Hollis S. Ingraham,M.D.

Commissioner of Health

Mayor John Lindsay
City of New York
City Hall
New York, New York 10007

cc: Doctor Merril Eisenbud
Doctor Matthew A. Vassallo

* * *

SAME LETTER SENT ALSO TO:

Presidents of Boroughs (Mario J. Cariello, Abe Stark, Herman Badillo, Robert T. Connor, Percy Sutton)

Comptroller Procaccino

May 8, 1969

Dear Mr. Smith:

Enclosed is a report of the hearing I convened on the Water Pollution Abatement Program for the City of New York on March 25 and 26. Our conclusion is that compliance with the construction start and completion dates in the schedule submitted by letter of December 27, 1968, from Dr. Merril Eisenbud, Administrator of the Environmental Protection Administration, is possible if extraordinary measures are taken for its implementation by all entities of the City government.

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My staff and I would be glad to meet with you if you have questions. I look forward to hearing from you.

Sincerely yours,

Hollis S. Ingraham, M.D.

Commissioner of Health

The Hon. Francis X. Smith
President of the City Council
City Hall
New York, New York 10007

cc: Dr. Matthew Vassallo
Dr. Merril Eisenbud
Mr. Albert Machlin
Mr. Paul Eastman

* * *

ABATED SOURCES OF POLLUTION

WASTE SOURCE	LOCATION	RECEIVING WATER	EFFLUENT	EFFLUENT TYPE	POP OR FLOW	ABATEMENT STATUS	COMPLETION DEADLINE	REMARKS
COLUMBIA COUNTY								
Hudson C.		Hudson R.	Primary	Sanitary	11075	D-9	4/1/72	*
Hudson Training School	Hudson (C)	Hudson R. Trib.	Primary	Sanitary	500	E-9	6/30/68	**
ORANGE COUNTY								
Ramapo Piece Dye Works	New Windsor (T)	Quassaic Creek	None	Textile	0.05 mgd	A-9	12/1/68	Out of business
Warwick (V)		Wawayanda Creek	Primary	Sanitary	4000	D-9	4/1/72	*
Orangetown S.D. #2	Orangetown (T)	Hudson R. Sparkill Creek	Secondary	Sanitary	12000	A-9	10/1/68	
Pearl River S.D.	Orangetown (T)	Hudson R.	Secondary	Sanitary	15000	A-9	10/1/68	
ROCKLAND COUNTY								
Bear Mt. State Park	Stony Pt. (T)	Hudson R.	Secondary	Sanitary	5000	D-9	9/1/68	
Rockland State Hospital	Orangetown (T)	Sparkill Creek	Secondary	Sanitary	1500	D-9	4/1/72	
WESTCHESTER COUNTY								
Camp Smith	Cortland (T)	Hudson R. Trib.	Secondary	Sanitary	2400	D-9	7/1/67	
Standard Coated	Buchanan (V)	Hudson R.	Secondary	Dyes	.08 mgd	A-9	5/1/67	

* Completion deadline is for secondary treatment. Present effluent does not contrave stream standards

** Completed hook-up into Hudson (C) primary treatment plant.

APPENDIX B

COMPREHENSIVE SEWERAGE STUDIES STATUS

May 15, 1969

COMPREHENSIVE SEWERAGE STUDIES

NEW YORK STATE

NAME	WPC-CS	STUDY AREA	STUDY STATUS	IMPLEMENTATION
Rensselaer	109	Rensselaer (C), East Greenbush (T)	Accepted 10/10/67	In process of being included in Rensselaer County S.D. #1.
	19	Troy (C), Brunswick (T), Schaghticoke (T), N. Greenbush (T)	Accepted 1/26/66	Rensselaer County S.D. #1 formed
	18	Sand Lake (T)	Accepted 3/29/67	
	145	Castleton (V), Schodack (T)	Accepted 3/14/67	145-Proposed New STP and collection system located in the Town of Schodack north of the Village of Castleton-on-the-Hudson. Referendum to approve project defeated 11/68.
	65	Nassau (V)	Accepted 5/22/68	
Albany	37	Albany (C), Bethlehem (T), Cohoes (C), Colonie(T), Greene Island (V), Guilderland (T), Menands (V), New Scotland (T), Ravena (V), Coeymans (T), Voorheesville (V), Watervliet (C)	Accepted 8/31/66	37-Proposed New STP and interceptor located near Troy-Menands bridge. Engineering Report under review; under State Commissioner's Orders. Proposed New STP - Westerlo site and expansion of pumping station under design.
Columbia	151	County-wide study	Accepted 9/16/68	County S.D. being formed.
New York City	29	Port Richmond, Bloomfield	Accepted 8/30/66	
	31	Tottenville	Accepted 3/ 8/67	
	7	Wards Island	Accepted 4/12/66	
	89	Fresh Kills	Accepted 10/31/68	

NAME	WPC-CS	STUDY AREA	STUDY STATUS	IMPLEMENTATION
Greene	189	County-wide study	Underway	None
	80	Cairo (T)	Accepted 2/ 8/67	None
	77	Catskill (V)	Accepted 11/21/67	77-Proposed New STP - Village of Catskill. Engineering Report approved 10/2/67. Final Plans approved.
Dutchess	186	Poughkeepsie (C)	Accepted 4/ 1/69	Consideration by municipal officials
	119	Fishkill, Wappinger, Casper Creek	Accepted 9/13/67	None
	22	Hyde Park (T)	Accepted 12/16/65	None
	59	So. Hyde Park (T), Poughkeepsie (T)	Accepted 2/21/69	Consideration by municipal officials
Ulster	171	County-wide study	Scheduled for completion - Spring 1969	171-Proposed New STP at site of existing City Plant (Kingston). Engineering Report under review.
				171 & 130-Proposed expansion of Highland Plant to secondary treatment. Engineering Report under review.
	130	Marlboro (T)	Under review	130-Proposed expansion of existing Highland Sewer District Plant to secondary treatment. Engineering Report under review.
	131	Woodstock (T)	Under review	
	136	Rosendale (T) and (V)	Under review	
Putnam	187	County-wide study	At N.Y.S. Comptrollers Office for Approval.	

NAME	WPC-CS	STUDY AREA	STUDY STATUS	IMPLEMENTATION
Orange	102	Newburg (T)	Accepted 1/10/67	Engineering Report submitted April 1969
	154	County-wide study	Accepted 1/27/69	154-New STP in City of Newburg. Under construction
				New STP in Cornwall. Under construction.
Westchester	32	Peekskill (C), Cortland (T)	Accepted 9/ 5/67	Incorporated in County Study 173
	5	Croton Watershed	Accepted 6/24/64	Incorporated in County Study 173
	47	Briarcliff Manor	Accepted 7/19/66	Incorporated in County Study 173
	26	Ossining (T) and (V)	Accepted 11/ 6/64	Incorporated in County Study 173
	110	Peekskill-Hollow Creek Drainage Basin	Accepted 2/27/68	Incorporated in County Study 173
	173	County-wide study	Accepted 7/ 3/68	Formation part county S.D. in progress
Rockland	193	County-wide study	Underway	
	53	Haverstraw (T) and (V), W. Haverstraw (V)	Accepted 1/27/66	53-Proposed Regional sewerage system with STP at Bowline Point. Construction Contract to be awarded May 1969.
	54	South Nyack (V), Nyack (V), Upper Nyack (V), Grandview-on-the-Hudson (V)	Accepted 3/ 9/66	Municipalities have a contract tc enter Orangetown SD

APPENDIX C

MUNICIPAL SEWAGE TREATMENT WORKS PROPOSAL

May 15, 1969

Municipal Sewage Treatment Works Proposals

(Albany Region)

Approvals 1965 - 1969 None

Proposals Under Review

NAME	STATUS	ANTICIPATED MIN. DEGREE OF TREATMENT
Albany County		
Menands (V)*	Engineering Report Under Review	Secondary
Albany (C)**	Engineering Report Under Review	Secondary
Coeymans (T)	Final Plans being Reviewed by FWPCA	Secondary
Greene County		
Athens (V)	Engineering Report Approved 10/2/67	Secondary
Catskill (V)	Report Approved 3/27/69 - Final Plans Under Review	Secondary
Coxsackie (V)	Engineering Report Under Review	Secondary
Rensselaer County		
Co. Sewer District No. 1	Engineering Report Under Review	Secondary

* Albany County Sewer District - North Side Project

** Albany County Sewer District - South Side Project

(White Plains Region)

Approvals 1965 - 1969

NAME	LOCATION	DEGREE OF TREATMENT
Dutchess County		
Rockingham Farms S.D.	Wappinger (T)	Secondary
Midpoint Pk. S.D. Corp.	Wappinger (T)	Tertiary
Hudson Valley Corp.	Fishkill (T)	Secondary
Greenfield S.D. Corp.	Hyde Park (T)	Secondary
Arlington S.D.	Poughkeepsie (T)	Secondary
Orange County		
Newburgh (T)	Newburgh (T)	Secondary
Newburgh (C)	Newburgh (T)	Secondary
Cornwall (T), (V)	Cornwall (T)	Secondary
New Windsor (T)	New Windsor (T)	Secondary
Putnam County		
Cold Spring (V)		Secondary
Rockland County		
Rockland Co. S.D. #1	Orangetown (T)	Secondary
Orangetown S.D. #2	Orangetown (T)	Secondary
Stony Point	Stony Point (T)	Secondary
Regional Facility	Haverstraw (T) & W. Haverstraw (V)	Secondary
Haverstraw (V)	Haverstraw (V)	Secondary

Proposals Under Review

NAME	STATUS	ANTICIPATED MIN. DEGREE OF TREATMENT
Dutchess County		
Beacon (C)	Final Plans Under Review	Secondary
Poughkeepsie (C)	Awaiting Submission of Eng. Report	Secondary
Tivoli (V)	Eng. Report Approved	Tertiary

(White Plains Region)

Proposals Under Review

NAME	STATUS	ANTICIPATED MIN. DEGREE OF TREATMENT
Orange County		
Newburgh (T)	Eng. Report Submitted	Secondary
Highland Falls (V)	Awaiting Submission of Eng. Report	Secondary
Ulster County		
Lloyd (T)	Eng. Report Under Review	Secondary
Saugerties (V)	Eng. Report Under Review	Secondary
Kingston (C)	Eng. Report Under Review	Secondary
Westchester County		
Peekskill (C)	Awaiting Submission of Eng. Report	Secondary
Ossining (T)	Awaiting Submission of Eng. Report	Secondary
Yonker (C)	Awaiting Submission of Eng. Report	Secondary

(New York City Area)

Approvals 1965 - 1969 None

Proposals Under Review

NAME	STATUS	Anticipated Min. Degree Of Treatment
North River Project	Awaiting Submission of Eng. Report	Secondary
Red Hook Project	Awaiting Submission of Eng. Report	Secondary
Owls Head Reconstruction Project	Awaiting Submission of Eng. Report	Secondary
Wards Island Extension Project	Eng. Report Under Review	Secondary
Bowery Bay Extension Project	Awaiting Submission of Eng. Report	Secondary
Tallmans Island Improvement Project	Eng. Report Under Review	Secondary
Hunts Point Extension Project	Awaiting Submission of Eng. Report	Secondary
Port Richmond Extension Project	Awaiting Submission of Eng. Report	Secondary

APPENDIX D

INDUSTRIAL WASTE TREATMENT WORKS PROPOSALS

May 15, 1969

PROPOSALS UNDER REVIEW

Name	County
Consolidated Edison (Indian Point)	Westchester
Roundout Corp.	Ulster
Sonotone Corporation	Putnam
American Sugar Co.	Kings
Penn Central R.R.	Albany
Hudson Wire Co.	Westchester

APPROVALS 1965-1969

Name	County	Date Approved
Continental Can Co.	Rockland	5/7/68
DMF Company	Dutchess	7/8/68
Proctor & Gamble	New York	1/24/68
New York Plaza Building Co.	New York	4/23/68
Humble Oil	Albany	2/28/69
General Aniline & Film Corp.	Orange	2/10/69
Orange & Rockland Utilities	Rockland	4/18/69
Metropolitan Oil Co.	Albany	7/17/67
Mobil Oil Co.	Albany	9/17/68
General Electric	Albany	1/3/67

APPENDIX E

CONSTRUCTION GRANT PROJECTS STATUS

May 15, 1969

Table 1
LOWER HUDSON RIVER BASIN
NEW YORK STATE
CONSTRUCTION GRANTS PROJECTS COMPLETED

Project Number	Applicant - County	Eligible Project Cost		Grant Amount	
		Federal	State	Federal	State
258	Hudson (C), Columbia	$ 1.033,870	$ 1,033,870	$ 310,161	$310,161
265	Cornwall (T), Orange	153,679	153,208	46,103	45,962
176	Orangetown (T), Rockland	631,943	27,307	183,810	8,443
275	Orangetown (T), Rockland	242.200	242,200	79,925	72,660
	Total	$ 2,061,692	$ 1,456,585	$ 619,999	$437,226

Table II
LOWER HUDSON RIVER BASIN
NEW YORK STATE
CONSTRUCTION GRANTS PROJECTS UNDER CONSTRUCTION

Project Number	Applicant - County	Eligible Project Cost Federal	Eligible Project Cost State	Grant Amount Federal	Grant Amount State
317	Colonie (T), Albany	$ 1,093,740	$ 1,093,740	$ 328,120	$ 328,122
86	Newtown Creek, New York City	162,924,041	64,488,733	250,000	38,596,507
178	North River, New York City	220,000,000	220,000,000	2,200,000	129,800,000
357	Owl's Head, New York City	106,900	106,900	40,590	32,070
349	Port Richmond, New York City	3,030,492	3,030,492	220,000	1,598,295
406	Bowery Bay, New York City	975,340	975,340	292,600	292,502
214	*Ward's Island, New York City	1,460,000	1,405,147	438,000	421,544
363	Ward's Island, New York City	1,083,775	1,083,775	357,640	325,132
166	*Tallman's Island, New York City	4,782,819	237,636	250,000	130,153
345	Coney Island, New York City	4,559,005	4,559,005	220,000	2,515,403
378	Poughkeepsie (T), Dutchess	3,871,400	3,871,400	1,277,560	1,161,420
368	Cornwall (T), Orange	1,135,923	1,135,923	374,840	340,776
53	Newburgh (C), Orange	7,494,536	7,494,536	525,050	3,971,571
364	New Windsor (T), Orange	2,363,000	2,348,202	779,790	704,460
290	Orangetown (T), Rockland	3,533,600	3,533,600	1,166,080	1,060,080
9	Piermont (V), Rockland	357,900	357,900	107,370	107,370
274	Rockland Co SD#1, Rockland	28,538,800	28,538,800	9,417,800	8,561,640
268	Stony Point (T), Rockland	1,720,100	1,720,100	567,730	516,030
247	*Buchanan (V), Westchester	175,500	162,166	52,650	48,649
88	*Peekskill (C), Westchester	550,000	185,811	165,000	55,743
	Total	$449,756,871	$346,329,206	$19,030,820	$190,567,667

* Project completed except for final payment being made.

Table III
LOWER HUDSON RIVER BASIN
NEW YORK STATE
CONSTRUCTION GRANTS PROJECTS WITH FWPCA GRANT OFFERS

Project Number	Applicant - County	Eligible Project Cost		Grant Amount	
		Federal	State	Federal	State
377	Colonie (T), Albany	$ 600,000	$ 600,000	$ 180,000	$ 180,000
387	Coeymans (T), Albany	1,330,789	1,330,789	399,230	399,237
503	Athens (V), Greene	623,360	623,360	187,010	187,008
493	Tivoli (V), Dutchess	133,900	133,900	40,170	40,170
456	New Windsor (T) SD#9, Putnam	897,000	897,000	296,010	269,100
244	Cold Spring (V), Putnam	1,041,810	1,041,810	312,540	312,543
492	Haverstraw (T), Rockland	4,577,000	4,577,000	40,590	2,705,610
498	New Paltz (V), Ulster	910,500	910,500	273,150	273,150
	Total	$10,114,359	$10,114,359	$1,728,700	$4,366,818

Table IV
LOWER HUDSON RIVER BASIN
NEW YORK STATE CONSTRUCTION GRANTS
PROJECTS BEING PROCESSED BY THE NYSDH AND FWPCA

Project Number Number	Applicant - County	Eligible Project Cost		Grant Amount	
		Federal	State	Federal	State
570	Albany (C), Albany	$ 3,033,100	$ 3,033,100	$ 30,330	$ 1,789,530
388	Albany Co SD, Albany	36,480,000	36,480,000	364,800	21,523,200
591	Colonie (T), Newtonville SD, Albany	770,000	770,000	231,000	231,000
514	Catskill (V), Greene	2,578,200	2,578,200	773,460	773,460
511	Ireland Estates, Dutchess	65,400	65,400	19,620	19,620
	Total	$42,926,700	$42,926,700	$1,419,210	$24,336,810

APPENDIX F

OPERATION & MAINTENANCE STATUS

May 15, 1969

Operation and Maintenance For Municipal Sewage Treatment Plants
Fiscal Years 1965-68
SUMMARY REPORT - LOWER HUDSON DRAINAGE BASIN

COUNTY	NUMBER OF MUNICIPAL PLANTS*	NUMBER OF APPLICANTS	NUMBER OF APPLICATIONS APPROVED	TOTAL ELIGIBLE COST OPERATION & MAINTENANCE	AMOUNT STATE GRANT	APPLICATIONS BEING PROCESSED	APPLICATIONS DISAPPROVED
Albany	2	NONE	-	-	-	0	-
Columbia	1	1	1	43,990	14,009	0	0
Dutchess	3	6	6	385,720	128,573	0	0
Orange	5	8	6	87,446	26,416	0	2
Putnam	NONE	-	-	-	-	-	-
Rensselaer	NONE	-	-	-	-	-	-
Rockland	7	13	11	491,576	155,789	0	2
Sullivan	NONE	-	-	-	-	-	-
Ulster	NONE	-	-	-	-	-	-
Westchester	15	43	43	4,039,043	1,318,768		
TOTAL	33	71	67	5,047,775	1,643,555	0	4

* Direct Discharge to Hudson River (main stem)

Operation and Maintenance For Municipal Sewage Treatment Plants
Lower Hudson, East River, Kill Van Kull, Upper Bay and Lower Bay Drainage Basins
SUMMARY REPORT - NEW YORK CITY
Fiscal Year - 1965-1968

PLANT NAME	LOCATION	RECEIVING WATERS	TOTAL ELIGIBLE COST OPERATION AND MAINTENANCE	AMOUNT STATE GRANT
Ward Island	Manhattan	East River	9,655,355	2,353,870*'
Hunts Point (including Rikers Island Pump Station)	Bronx	East River	5,287,491	1,237,353*'
Bowery Bay	Queens	East River	5,289,684	1,281,540*'
Tallmans Island	Queens	East River	3,836,094	887,529*'
Hart Island	Bronx	East River	230,100	76,700
Port Richmond	Richmond	Kill Van Kull	989,490	329,830
Oakwood Beach	Richmond	Lower Bay	1,793,793	442,736*'
Owls Head	Brooklyn	Upper Bay	4,830,476	1,207,091*'
TOTAL	-	-	31,912,483	7,816,649**

*' 1968 Application Denied

** Includes supplemental applications for fiscal year 1965 of $32,327 for water consumption at all plants

APPENDIX G

WATER QUALITY SURVEILLANCE STATIONS

May 15, 1969

The water quality surveillance program on the estuary portion of Hudson River is:

	Station Location	Date Activated	Sampling Frequency
1.	Yonkers	1968	Monthly
2.	Piermont	1969	Monthly
3.	Verplank **	1969	Monthly
4.	Bear Mountain	1968	Monthly
5.	Beacon	1969	Monthly
6.	Newburgh	1957	Weekly
7.	Chelsea	1965	Bi-Weekly
8.	Poughkeepsie (City Water Works)	1964	Monthly
9.	Catskill	1966	Monthly
10.	Coeymans	1966	Monthly
11.	Glenmont *	1964	Bi-Weekly
12.	Green Island	1966	Monthly
13.	Danskaamer Point	1965	Deactivated 1967
14.	Poughkeepsie (State Hospital)	1958	Deactivated 1965
15.	Rensselaer	19[illegible]	Deactivated 1966

* Automatic Monitor activated at this station 1967

** Automatic Monitor to be installed at this station 1969

MR. STEIN: Thank you, Mr. Eastman, for an excellent and comprehensive report.

Are there any comments? Mr. Sullivan.

MR. SULLIVAN: I asked a question this morning, Mr. Eastman, as to whether or not the schedule that New York City has proposed for completion contains an enforceable mandate by the State, or whether it is a gentleman's agreement, and it was suggested that I defer the question until the New York State representative testified.

MR. EASTMAN: It is not included in any administrative or Court order.

MR. SULLIVAN: Then my characterization as a gentleman's agreement is a valid one?

MR. EASTMAN: I wouldn't use that term, but you are at liberty to use whatever term you like.

MR. SULLIVAN: What I am really wondering is if New York City goes ahead with its plans, and we are going to hear about those in a moment, that is one thing, but if New York City, for whatever reason, does not, what processes are available to New York State to require the City to move and meet the schedule.

MR. EASTMAN: Well, as I mentioned, we

have authority not only to issue administrative orders, but, of course, we have further authority to refer recalcitrants to the Attorney General's Office.

MR. SULLIVAN: In one of the appendices, you classify these enforcement transactions and distinguish between a Commissioner's Orders and a department directive. Would this arrangement with the City be characterized in your terminology as a department directive?

MR. EASTMAN: Well, as I mentioned, we had an investigatory hearing, and as a result of that, the hearing officer, who was designated by the Commissioner, issued his report of the hearing and then transmitted this to the City.

We indicated that we saw this schedule submitted in December 1968 by the City, and discussed in the investigatory hearing in March that it was a very tight schedule and would require extraordinary effort on the part of the City, as well as a firm financial commitment on the part of those who have authority to make this commitment, in order to carry it out.

I think the City's presentation will indicate the extent to which they are carrying out these extraordinary measures and the extent to which there is the firm financial commitment which we have specified is necessary.

MR. SULLIVAN: I didn't read all the correspondence in here, but my understanding is that the State has accepted as valid and reasonable the schedule put forth by New York City?

MR. EASTMAN: We have not incorporated it in any official administrative action other than the discussion included in the letters from the Commissioner to the various officials of New York City.

MR. SULLIVAN: But the report of the investigatory hearing recommended that favorable consideration be given to the schedules.

MR. EASTMAN: Is this a question or a statement?

MR. SULLIVAN: Well, I don't see--the report is not here. There is reference to it, but I wondered about it.

I am uncertain as to the status of the arrangement between New York State and New York City with respect to its schedule of performance.

MR. EASTMAN: Are you referring to the

legal arrangements?

MR. SULLIVAN: What standing the schedule has. Is it a proposal made by honest men to other honest men, or does it have some legal significance?

MR. EASTMAN: Well, we wouldn't object to your using that characterization of honest men to other honest men (laughter).

MR. SULLIVAN: One other question along that line:

There is a page in here that is headed "New York City Area," and there is a little paragraph for each of the facilities.

The wording indicates that there is a stipulation or a consent order or something--I don't know what it was--that heretofore imposed a date for completion.

Am I correct in understanding that this arrangement now between the State and the City is such that it supersedes those previous stipulations?

MR. EASTMAN: Well, I think if you will read the dates for completion in there, perhaps you can draw your own conclusions.

MR. SULLIVAN: They appear to vary from

1969 to 1972.

MR. EASTMAN: Well, I don't think the City is likely to complete a billion dollars worth of construction by 1969.

MR. SULLIVAN: I wasn't merely addressing my question as to the feasibility of the schedule, but addressing it as to whether or not these stipulations have now been nullified by a friendly arrangement between these two governments.

MR. EASTMAN: Well, as you have implied, it might be rational to bring up to date the official and legal understanding between the City and the State Department of Health with regard to this schedule, and this is under consideration.

MR. SULLIVAN: One other question that concerns me, and I will talk about it further when I have the opportunity of coming to the podium and then the other people will talk about the other points.

At the last session of this conference, the agreement was reached that all facilities would be constructed by 1970, except one, which could not be done until 1972.

Now, I wonder--if the new schedule which has been outlined very briefly for us is presented for consideration here, and with a completion date of 1976, we fear that by the past record that the fourth session of this conference in 1974 will decide, because it did not work out as well as we thought, the new date is 1980.

MR. EASTMAN: Well, I think at the fourth session we might be equally interested in the progress that is being made or will have been made in New Jersey.

MR. SULLIVAN: You bet you should be, and in New York, too.

We suffer some of these same problems so far as the schedule is concerned, but I am concerned that the prediction of the completion date and the official acquiescence to a schedule should be regarded as two different transactions. That is what I am really concerned about, the state of this schedule.

Deferring now the schedules, don't you think that in terms of official acquiescence of a new schedule, that it may create in the mind of the public that it is more delay, and why should they believe this new schedule when the one we all agreed to in 1967 obviously wasn't any good either?

MR. EASTMAN: Well, I think what we are interested in and I think what the conferees are interested in is actually constructing waste treatment plants and operating in a manner which would protect the quality of the receiving waters, and I think that after the City has an opportunity to present not only its schedule but their progress in connection with implementing this schedule, that you can draw your own conclusions as to whether this will result in construction of waste treatment plants, including treatment of what are now raw discharges, and resulting in improvement of the receiving waters.

This is nice, but the completion of construction of waste treatment plants is even nicer, and that is what we are looking forward to in connection with New York City.

MR. SULLIVAN: Would it be possible for your department as the enforcement agency to retain intact the previous stipulations, but that New York City move with haste on its new schedule, and to withhold enforcement action against it?

MR. EASTMAN: I can't really answer that question.

We can discuss it with our office of counsel and put it in the record.

MR. SULLIVAN: Thank you.

MR. STEIN: Are there any other comments or questions?

MR. METZLER: I would like to comment.

I think the questions raised by the conferee from New Jersey are questions that I would raise if I was from there.

I want to compliment Commissioner Eastman for the calm way in which he has responded to these, as well as the factual way.

It seems to me that there might be something which is escaping the view of our neighbor across the river.

There are various ways of going at the job, but our success will be measured by what it is that will abate pollution.

The position that the New York State Health Department has taken is that as far as legal orders were concerned, those were issued by the Interstate Sanitation Commission and those orders stand.

As far as getting sewage treatment, we doubt that Court orders and Court actions are necessarily the only way to get it done, and, as a result, we have brought other pressure to bear.

Let me tell you three:

1. The Commissioner on his own order has authority to issue large fines against the City for failure to perform.

2. Then the Commissioner may also recommend to the Attorney General enforcement action against the City any day of the week or any week of the month that the City fails to maintain a satisfactory rate of progress.

3. This is the one that is the most persuasive, it seems to me: Unless the City gets nearly a billion dollars' worth of construction under way by the end of 1971, they are going to lose $500 million worth of State guaranteed State financing.

I say that these things will move the City faster toward performance than Court orders or legal actions following Court orders, although I commend you upon the determination shown by New Jersey with some of your polluters.

I say this in an effort to clarify rather than to stimulate the debate on this.

MR. SULLIVAN: The reason, Mr. Metzler,

our responses are so dispassionate is because our differences are entirely intellectual (laughter).

Can I comment on Mr. Metzler's comments?

MR. STEIN: Surely.

MR. SULLIVAN: I would agree, and certainly I am not suggesting or not predicting that New York City will fail to meet the schedule.

Our own constituents were under orders, and I would like to report that other people are similarly bound. This keeps everybody happy, feeling that everybody has been dealt with equitably, so when it comes to a point of a failure to move on a satisfactory schedule, as you have phrased it, what is the action?

Is it an action taken for failure to observe a pre-existing order, or is it an action that would have to be initiated entirely from scratch at that point?

Could you measure progress here on out in a legal sense on this schedule that we are discussing for the City?

MR. METZLER: I think as far as the State of New York is concerned, there has been a change in municipal administration. They have set up a whole new agency to handle this matter.

That agency gave us its first schedule in December of 1968. That is the schedule we think of as the official schedule.

Any major change from that would bring reprisals from the State of New York. It does no good to go back and look and see that the City promised in 1949 or again in 1962 to do certain things. It did part of these. It was not able to accomplish them all.

As far as we are concerned, the total package is the package that we got in December of 1968, and that is the one that we are going to measure performance by.

If necessary, we can resort to legal orders or court action or withholding of funds, which, as I might point out, we have done in a limited way already in an effort to speed this up, and I might say the City has responded, not without some cries of pain.

MR. SULLIVAN: Would this then replace the pre-existing orders that called for a different schedule? 7)

MR. METZLER: I am not sure what orders you are talking about.

MR. SULLIVAN: Well, I am not exactly sure--

MR. METZLER: May I say this: As far as the State of New York is concerned, the legal order which exists is that by the Interstate Sanitation Commission, and the New York State Health Department, in addition to this, has what we consider an official submission from the City of New York as to the schedule that it will maintain, and we expect to see that they meet that schedule.

I think, if you want to defer some of this, once you have heard the presentation by the City and see the resources and the ingenuity and the innovations that they have brought to this, you might be able to go back and tell your constituents that they have really got a going thing over there.

MR. SULLIVAN: They may very well have. I am putting these questions before even looking at the merits of the proposal. I am concerned only with the schedule and what the legality of it is.

MR. STEIN: Let me try this: You know, that was a very excellent statement by Mr. Eastman, when you talk about gentlemen, Mr. Eastman was a gentleman when he worked with us years ago, when he had more hair on top and less under his nose, and before he took that graduate degree at Harvard and was administrator pleni-potentiary to Eastern Europe. Now he is a really balanced gentleman.

I think I have known Dwight for over 20 years both in the midwest, in Kansas and here, and I know the people from New York City who went to the same college I did at about the same time, so, at least, it is an agreement between gentlemen. Of that we are sure.

But let us look at the facts of the situation. The conference, while we do this very nicely, you will have to understand is the initial stage of an enforcement procedure, and I would like to point this out. Whatever any of the States have done--and I think the States and the interstate agency have cooperated completely--we have set certain dates under the conference procedure.

At the last session of the conference, and there may be some modification of this, it says:

> "The conferees agree that all remedial facilities," and this applies to all here, "will be placed in operation by 1970 except the proposed North River facility which cannot be completed and be in operation until 1972."

Without wanting to anticipate the presentations of both New York and New Jersey, I think we do have to face these facts. We did set very tight schedules. I think necessarily, when you set a tight schedule in water pollution control, schools, roads, or in any kind of construction, given the pressures and the vagueries of American Federal-State-municipal political life, there might be slippage and there may be some slippages in the schedules. Whether these are significant or not, I don't know. This is up to the conferees.

As far as I understand, the New York situation is this: When we were talking about this North River facility plant originally, we were talking in terms of a BOD reduction, the estimates varying from 60 to 70 per cent in BOD. We are now talking 90 per cent.

In addition to that, I have some 13 or 14 other plants which may be achieving an average of an 80 per cent BOD reduction, and some of them were operating between 60 and 80 per cent, and except for Newtown Creek, which may present some construction difficulties -- we hope to hear from them later on that -- New York City is committed to a 90 per cent BOD reduction throughout its system.

In working with New York City for years, when they are committed they are going to do this. The only question is when they are going to do it, and the time factor may be a factor which, with all the best intentions on all our parts, may be beyond our absolute control as to the exact date or the exact month, but we are going to come very close.

However, they are committed to this 90 per cent reduction and chlorination.

We have yet to hear from one of the major sources in New Jersey. I know what the State of New Jersey does. I don't think there is any State that has had a more aggressive or progressive program.

The question here is what we have to do with the constituents in New Jersey to get this going. There is no question that the State of New Jersey is committed to this program, but I do think, Mr. Sullivan, from whatever you say on the State side of it, each State works differently. New Jersey had orders, New York has arrangements, but as far as the Federal Government is concerned, we have initiated an enforcement procedure with specific dates.

To my knowledge, the Secretary has not modified the dates that I have read, 1970 for completion of all facilities in this area except the North River, which is 1972.

I might point out, for those of you in the audience who do not know this, the North River facility amounts to a $220 million job. The total Federal appropriation for construction grants in the whole country is $214 million, and the reason for those two years is I am not sure we have ever had anything that big.

Those interceptor sewers are as big or bigger than subways going into the plant, and we just have to face the physical facts in seeing what we can do.

Let me again try to put this in perspective for you. All the wastes from Manhattan going into the Hudson River today are going in raw. New York City is going to intercept all these wastes and treat these wastes, and this is a tremendous job. I think this is what we have to look at.

Again, let me give you an appraisal. As I see this, we have a Federal enforcement action with specific dates. We have New Jersey working on its own program that issues orders, which I think is a very valid program and a reasonable way to do it, and if the orders are violated they go to Court.

I think New York State has a little different approach in working with this operation. We have heard of the New York record before on the bond issue and what they have done in the past several years. The New York procedure is different from the New Jersey procedure. I would not say it is any less or any more effective, as has been shown . I think, as far as we are concerned in the Federal Government, we would consider when we arrive at an agreement with New York State on the dates of what they are going to do and New York City--at least from the legal point of view and I hope that we don't have any problem -- that they are moving within the State law in negotiating with the cities in the State, including New York City, in an entirely valid and acceptable manner that would constitute compliance with the Federal requirements.

We have shown that plants have been built this way, and I think we can demonstrate this record.

Are there any other comments or questions on this?

(No response)

MR. STEIN: If not, thank you very much, Mr. Eastman.

Since we are after 4:00, I think we might as well dispense with the recess and try to go right ahead. I had hoped we could have a little break, but I think we will be better off if we don't.

Mr. Metzler?

MR. METZLER: Now the City of New York will continue its interrupted presentation here which we started before lunch.

Commissioner Feldman. If there is anyone else you want to assist you with this presentation, why, you can go right ahead and do it.

STATEMENT BY
MR. MAURICE FELDMAN
COMMISSIONER OF WATER RESOURCES
THE CITY OF NEW YORK

MR. FELDMAN: Thank you.

I think many of you have seen pictures of perhaps five men standing around beating a horse, but, of course, it was the horse that drew the wagon and not the five men who were beating the horse, and sometimes I feel like that horse. We have had many whip licks thrown at New York City for what we have or have not done, but I must emphasize that it is New York City that has done and will do a lot, and ultimately the problem we are talking about will be solved by the people in my organization.

So far as the commitment of New York City, a point that has been made much of, I think the clearest indication of that commitment has been standing on this platform for the last two hours. Not too many people have looked at it. I am referring to this map of New York City.

The areas shown in color have had their plants designed and built virtually entirely by New York City with New York City money, and I don't think any more commitment is needed than that, and I think any nit-picking about which stipulation was made will not result in any great treatment of sewage. There first has to be the will and the ability, and both of these things very definitely now reside within New York City.

Much of the confusion arising with previous dates is that the dates of previous promise of completion were for programs which do not resemble at all the program that we have now.

This was touched on by the Chairman of the conference, in that our program has been extensively revised because of new State and Federal standards, and the most recent program submitted in 1968, after consultation with the State Health Department, our major parent organization--parent in that it supplies what parents are obligated to provide for their children, the money--to that extent, the agreement by the State on this program makes it the valid program that we are moving on now.

So that some of this confusion about dates of completion should be laid aside and we should consider now that which lays before us--the immediate commitment of New York City within the realm of the State bond issue to convert virtually all of its plants to 90 per cent, the full secondary treatment, step aeration, and the commitment also on Newtown Creek, a plant which was mentioned earlier, to eventually get that to 90 per cent, but a commitment which we cannot undertake within the realm of the 1972 construction deadline, because much investigatory work remains to be done on Newtown Creek before we can physically effect this 90 per cent removal.

However, we will relieve the Newtown Creek plant of a portion of its load by transferring 60 million gallons per day from the drainage area to that plant to the Red Hook plant, which is now under design for the Brooklyn Navy Yard and which will provide the 90 per cent treatment. So that it requires an intensive investigation to know what goes on with this program, and the commitment is now there and we will get there.

Much of the thrust of previous comments has been that New York City has been remiss in meeting its previous schedules. I will not say that New York City was remiss, but it is true, it is a fact, that previous schedules were not met.

There is no good served by going into detail as to the reasons for not meeting these schedules, but what I will point out to you in a few minutes is a device which we instituted about a half a year ago to make certain that our future progress will be better than that in the past.

This is not by way of admitting that all past delays were due to the administration of New York City. There were many factors, one of which in a major plant (this quarter of a billion dollar North River plant)was alluded to this morning in a statement by Congressman Ryan so ably presented by Mrs. Faust, and this was the local community opposition to the location and degree of treatment at the North River plant, which had been agreed to at the previous meeting of this conference but was not locally acceptable either by the people or their elected representatives and required a major change in that plant involving a complete redesign. So a plant which was ready to go into construction in 1965 or 1966 could not so proceed because of this local opposition and now faces a complete redesign.

If that plant had gone into construction, it would be not far from completion by today and that would bring the fraction of New York City sewage treated from the three-quarters which it is today, as shown by these areas in color, to well over 90 per cent, and certainly no one could quarrel with New York City then having completed its 90 per cent of its program that the remaining 10 per cent would drag on a little.

I should also point out that the delay in the last remaining plant after North River, which is the Red Hook plant, resulted directly from the fact that the new treatment requirement was 90 per cent rather than the high rate activated 60 or 65 per cent.

A site was in hand, actually in the ownership of New York City for the Red Hook plant for a high rate activated sludge treatment, but as a result of the last conference and othermeetings the need for 90 per cent removal came about, and from then on we could not proceed on that site and had to find a new site.

If any of you have ever tried to find a small site in a small town for a treatment plant, just imagine trying to find a site in the high densities of New York City along the waterfront for such a program.

Luckily, the Navy Yard came along. This is now well under way in design but, of course, this necessitated a delay, so this is in partial answer to the scheduling.

Now, how will we prevent similar things from occurring as they did in the past, and how will we react more quickly to such occurrences?

For this, we retained a firm of management consultants called the Management Data Corporation, a firm which had developed a considerable amount of its experience on the NASA program, and they have programmed charts similar to the one I am about to show you, which led to our men flying around the moon a few weeks ago and stepping on the moon in a few months.

Will you pull that first slide down, please?

This (indicating) is one of six charts which are prepared by this firm of Management Consultants, which for each project shows its exact status as of the current time, and that is that vertical blue line about one-quarter from the left of the chart. This is the current date. For each horizontal line which represents the progress of a project, there are circles, these circles being milestones. They are what we have named milestones on each project from the early preparation to budget allocation, to site selection, to preliminary design, final design, awarding of contract, construction and completion of construction. All of these are milestones.

These estimated durations occurring between these milestones are provided not by our organization but by our consultants in their judgment.

Our aim is to not only stay on that, but sometimes to beat it.

The red horizontal lines you may find indicate slippage, so that as soon as there is any slippage, there is an immediate indication of a red line, and corrective action has to be taken at the regular monthly meetings, which are chaired by the management consultants, and at which any individual responsible for slippage or for advancement of the next item must move.

As a result of the analysis of the first set of projected dates on a set of charts such as this, we found that certain of the projects were critical with respect to commencement of construction in March of 1972.

May I have the next chart?

For those projects we instituted an acceleration program so as to bring them out more than six months before the critical time of March 1972 for start of construction, and by a combination of hand expediting, accelerating the consultant's design time, cutting down on the approval cycles, or "review cycles" as they are called. We see the results in the diagonal lines, which show by how much these projects have been shortened in total duration. Hence taking them comfortably out of the six-month critical period which we leave in as a factor of safety, so that to the extent that these have moved two, three or six months before the critical period, our factor of safety has increased from about two or three months up to six or eight months, so that even allowing some slippage, there still is room.

This material is fed monthly into a computer, which updates all of the information and provides a monthly report, a copy of which I have for the month of May, and further summarizes the total progress by plotting the number of milestones scheduled and attained.

For the month of May we have, for the first time, as a result of this acceleration program, been able to show that the attainment of milestones is now at a rate which is equal to the scheduled rate, and this, I think, provides the best credibility for our approach to bringing these projects in on time. This I think will answer considerably the previous criticisms of non-attainment in New York City.

In this program we have depended largely upon consultants since the in-house capability—which was recruited during the depression and which built us up, I believe, into one of the finest engineering organizations in the world in sanitary engineering in the Bureau of Water Pollution Control—has now come to a point where our in-house design capability is not adequate for the rapid pace of getting almost $1 billion worth of sewage treatment plants, both new design and upgrading, in addition to existing plants, into completion of design, within this time.

Hence, we have gone virtually entirely to consultant design, and are converting and have converted our organization basically to supervisors of design contracts, and this again is our wealth of potential which we depend upon to bring us in on time.

Now, rather than spending more time myself, I would like to have my Assistant Commissioner, Martin Lang, who is also director of the Bureau of Water Pollution Control and heads up the major design and construction and operation effort in water pollution control, give some thoughts that he may have on the advancement of this program and also on some of the newer projects we are looking to for the future, involving at least two items which have been mentioned here previously.

One is the study of alternates of ocean outfall as a perhaps possible substitute for the tertiary treatment in Jamaica Bay, and other new treatment methods that we look to, but I should emphasize that even though we are looking to all of these future alternatives, this will definitely not stop us from advancing our committed program, which will go on schedule to the best of our ability and our consultants and every effort we can put into it.

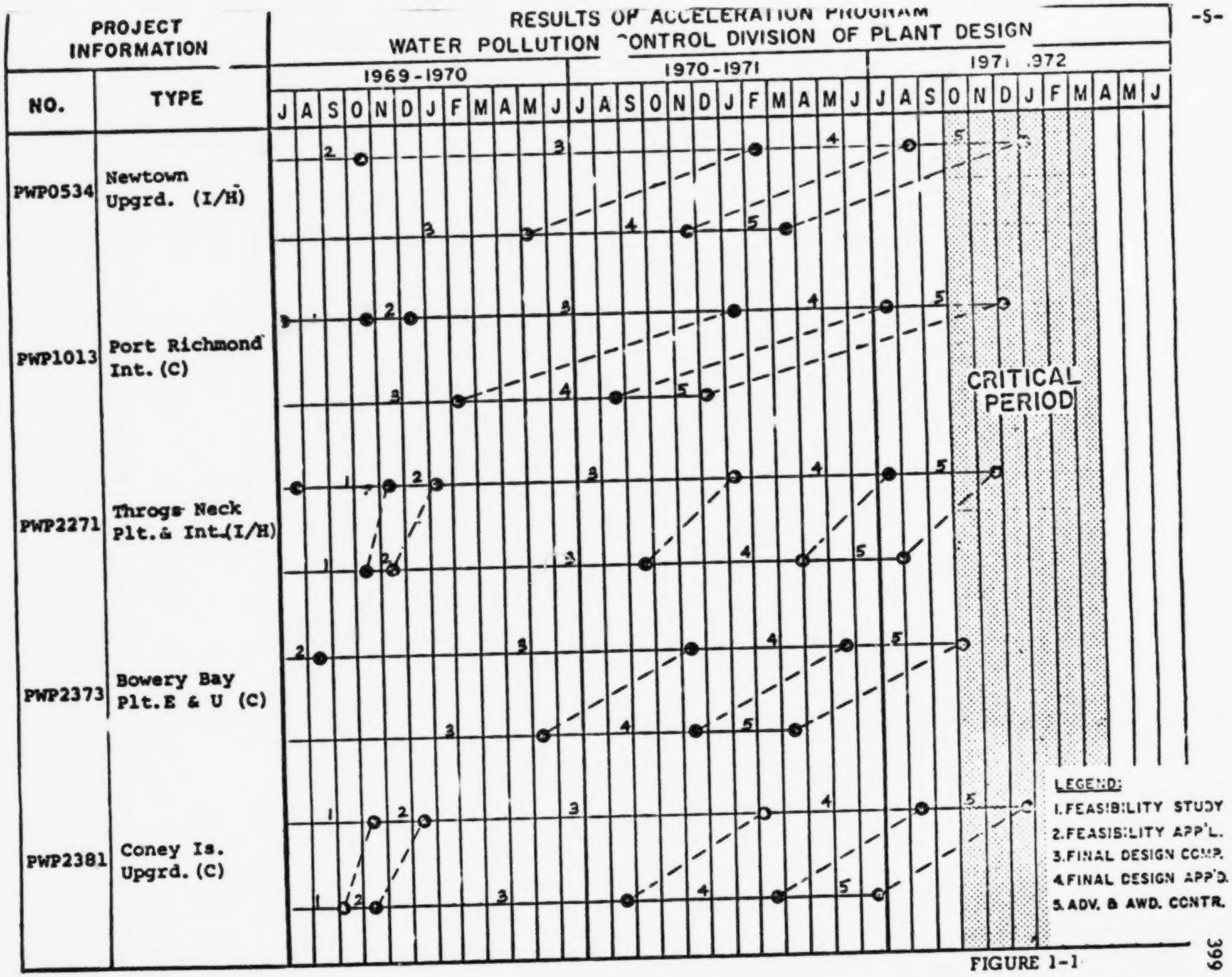
May I introduce Mr. Lang?

MR. STEIN: Mr. Feldman, while Mr. Lang is coming up, can we get copies of these charts for the record?

MR. FELDMAN: Yes. I can submit to you the copy of our latest monthly report for the month of May, which will have a summary of those which are in progress and will have considerably more detail than is shown.

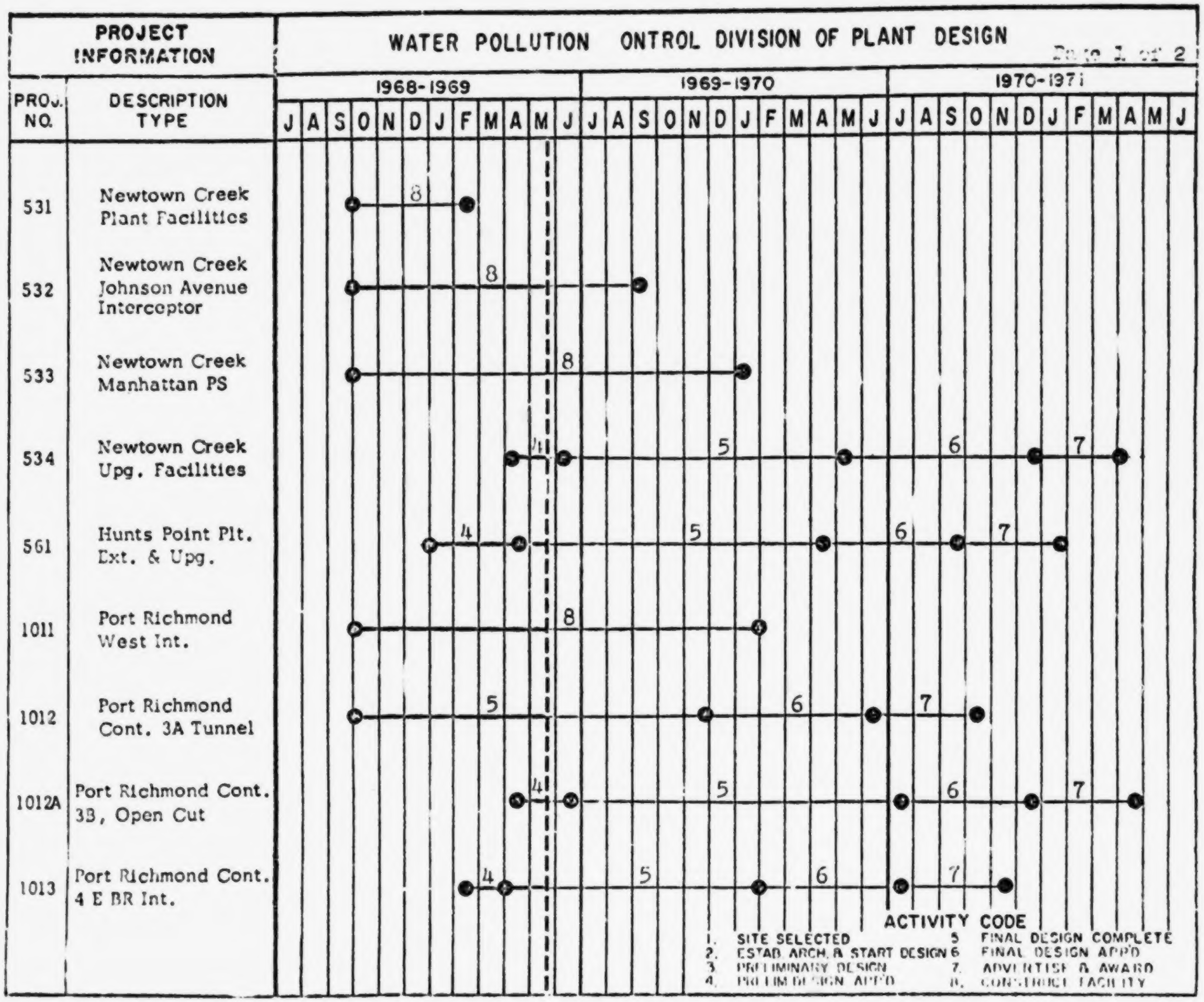
MR. STEIN: You referred to these two charts here, and I think if the transcript is going to have any meaning, we either should have pictures of this or duplicates of this so that we can put them into the record.

MR. FELDMAN: We will provide photographs of it.


RESULTS OF ACCELERATION PROGRAM
WATER POLLUTION CONTROL DIVISION OF PLANT DESIGN

LEGEND:
1. FEASIBILITY STUDY
2. FEASIBILITY APP'L.
3. FINAL DESIGN COMP.
4. FINAL DESIGN APP'D.
5. ADV. & AWD. CONTR.

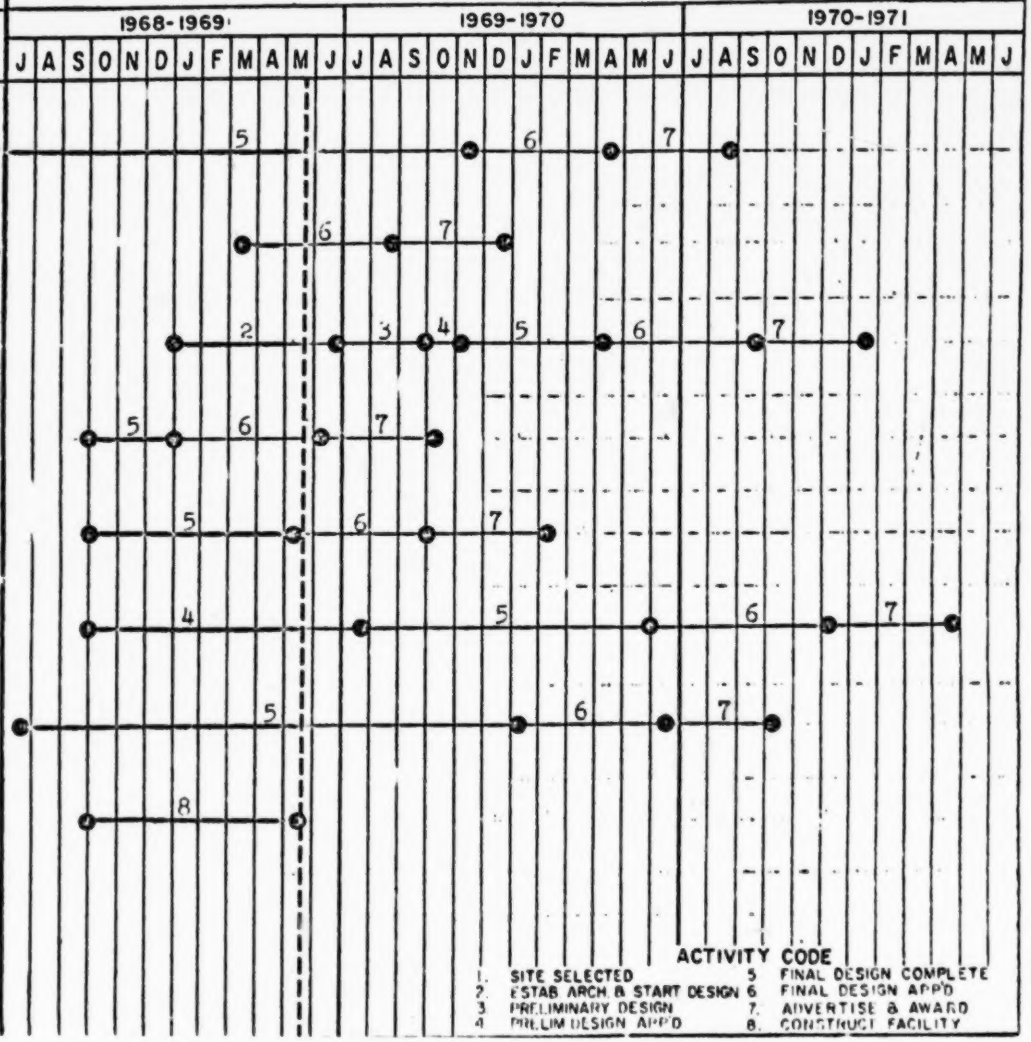
FIGURE 1-1


PROJECT INFORMATION
WATER POLLUTION ONTROL DIVISION OF PLANT DESIGN
Page 1 of 2
PROJ. NO.
DESCRIPTION TYPE
1968-1969
1969-1970
1970-1971
J A S O N D J F M A M J
J A S O N D J F M A M J
J A S O N D J F M A M J
531
Newtown Creek Plant Facilities
532
Newtown Creek Johnson Avenue Interceptor
533
Newtown Creek Manhattan PS
534
Newtown Creek Upg. Facilities
561
Hunts Point Plt. Ext. & Upg.
1011
Port Richmond West Int.
1012
Port Richmond Cont. 3A Tunnel
1012A
Port Richmond Cont. 3B, Open Cut
1013
Port Richmond Cont. 4 E BR Int.
8
8
8
4
5
6
7
4
5
6
7
8
5
6
7
4
5
6
7
4
5
6
7
ACTIVITY CODE
1. SITE SELECTED
2. ESTAB. ARCH. & START DESIGN
3. PRELIMINARY DESIGN
4. PRELIM DESIGN APP'D
5 FINAL DESIGN COMPLETE
6 FINAL DESIGN APP'D
7. ADVERTISE & AWARD
8. CONSTRUCT FACILITY

WATER POLLUTION CONTROL DIVISION OF PLANT DESIGN

Page 2 of 2

PROJ. NO.	DESCRIPTION TYPE
1014	Port Richmond - Plt. Ext. & Upg.
1015	Port Richmond - Mersereau Ave. PS & FM
1016	Port Richmond - Hannah St. PS&FM
1032	Wards Island Bx & Man. Grit Chambers
1033	Wards Island North Dock Contract 9A
1034	Wards Island South Dock Contract 9B
1035	Wards Island Plt Ext E upg cont 5 & 8
1121	Owls Head Hyperchlor Facilities 1-OH-19A



ACTIVITY CODE

1. SITE SELECTED
2. ESTAB ARCH & START DESIGN
3. PRELIMINARY DESIGN
4. PRELIM DESIGN APP'D
5. FINAL DESIGN COMPLETE
6. FINAL DESIGN APP'D
7. ADVERTISE & AWARD
8. CONSTRUCT FACILITY

MR. STEIN: Thank you.

Either you or Commissioner Lang I would like to have devote yourselves to this statement somewhere along the line: that is, the pumping station from Manhattan to the Newtown Creek plant is completed and removes another 150 million gallons a day of raw waste for treatment.

This is supposed to be the big change, and the Newtown Creek plant is the only plant in existence, and you say you are not going to get 90 per cent treatment.

I just raised that point. I think it needs explanation or comment before you get through.

MR. FELDMAN: I think the explanation is basically that if there were no serious delay in the construction of the intercepting sewers and pumping station in Manhattan, this plant would be fully in operation right now.

It was the original concept that Newtown Creek was to treat its immediate drainage area and also the sewage from southern and southeastern Manhattan, and that all started as a single project. It was just by accident that the plant itself and its adjacent tributary area went into operation a year or two before the contribution from Manhattan went into operation.

This was not the addition of a new concept of pumping Manhattan sewage to the plant after the plant was designed or built. It was integral with the original program for Newtown Creek.

MR. STEIN: I understand that, but let me say this again. Maybe I have not made this question clear.

If we are going to improve the water quality and if--how many plants do you have, 13 or 14?

MR. FELDMAN: Eventually 14. 12 major plants.

MR. STEIN: 12 major plants. In 12 major plants you are going to have 90 per cent BOD removal on line. We will talk about the dates later.

The point is, and what disturbs me is that 150 million gallons a day is going to that one plant in that system that is not going to provide the 90 per cent treatment.

MR. GLENN: Let me clarify one thing, Mr. Chairman.

The part of the statement you are reading from in the Interstate Sanitation Commission statement is talking about bacteriological quality and not how much removal of BOD, and what we are saying is that that 150 million gallons goes to this treatment plant and it will be properly disinfected. So the degree of treatment has nothing to do with what we are talking about in this report.

MR. STEIN: Again--and I know you have raised several assumptions--the effectiveness of disinfection with a less than 90 per cent treatment is going to be as effective as treating any kind of waste, but I think the issue still stands there. It is just passingly strange that the one plant in your system which is not up to this is the plant that is going to receive this waste from Manhattan.

MR. FELDMAN: Unfortunately, there is no alternative to this at present, because avoiding that would require the selection of a new site somewhere to change this sewage.

The tunnel under the East River is already finished in construction, and the intercepting sewers to this pumping station are finished, and the sewer in Brooklyn from the end of the tunnel to the plant is already in construction or completed in construction.

MR. STEIN: All right. I appreciate this, and I take this with very good grace, knowing what the problems are in New York in building a tunnel under the river. But if this is the case, I think we have all the more reason to see what we can do about upgrading Newtown Creek and getting this thing lined up so that we can really turn out an adequate effluent.

MR. FELDMAN: Yes. I did not go into detail. The problem with Newtown Creek is that there is no land surrounding this accessible or available, for expansion of this plant in that area. And investigating other methods of improving the treatment there would have cut into our available engineering forces for moving this $1 billion program I spoke of.

It may very well be that upgrading Newtown Creek from its high rate activated to full activated sludge can develop into a several hundred million dollar program by itself. And realizing the magnitude of that because of the size of the plant and the additional tankage that will be required if we were to even enter on the preliminary studies of such an item, I'm afraid it would detract from our other efforts in advancing this $1 billion program.

But definitely, as soon as some of the heat gets off and we see the success of our major program moving now, and as soon as we can spare a man or two to have a look at it, that will be the time that we will put our major energies to work on it--one of the items being a new method of treatment for which there is a Federal grant, which we have been graced by, providing the pilot plant area for that. And Mr. Lang will talk about that.

Should new methods of treatment develop in the next few years, it may easily be the device of choice for the Newtown Creek, especially because of the difficulty and expense of providing the conventional additional tankage that we would normally depend on to raise this plant to the 90 per cent efficiency.

MR. STEIN: Just let me have one last statement, and this is the last one because I want to go ahead.

Permit me to say this : If we are going to make the native of New York have the concept of New York, we certainly can't dissolve in our own filth. If we are not going to dissolve in our own filth, we have to put a plant perhaps in certain places like Newtown Creek, in a very high industrial district.

It does not seem to me to make sense that we can't get another block or another area and say that the land is not available for this all important purpose, when we can find land in metropolitan areas to push through highways and to put up high rise apartments.

I lived here for years with the old Penn Station across the street. If you in this City can manage to keep the trains running and build that big stadium and this high rise apartment building across the street, then how can you come up with the notion that land is not available near Newtown Creek because it is so expensive?

We have to have a question of priorities of what is the importance of this operation. I think if you, Commissioner Feldman or Commissioner Lang, are to succeed, at least the city people -- I don't say New York City particularly, but urban people—are going to have to recognize that you must have a priority or a right to acquire sites and lands, as they do for a highway, a new stadium, a new park, a new big building. If they are not going to give you the land, there is no way we can solve this problem.

I don't see why we have to twist ourselves into pretzels to ask you to come up with an engineering impossibility, when what the obvious solution is, it seems to me, is how about using the next two or three or four square blocks?

MR. FELDMAN: Well, this is something we will definitely look into, but, as I said, we have not had the engineering force to even put anyone to work looking at it, and as soon as we get a little breather, we will, and we will come up with a series of alternates and their cost estimates.

On the record officially we are committed both here and to the State Health Department at our previous hearing to upgrade the treatment at Newtown Creek to 90 per cent.

MR. STEIN: Right. Thank you.

Are there any further comments or questions?

(No response)

MR. STEIN: If not, Mr. Lang.

STATEMENT BY

MR. MARTIN LANG

ASSISTANT COMMISSIONER

DIRECTOR OF THE BUREAU OF WATER POLLUTION CONTROL

THE CITY OF NEW YORK

MR. LANG: Distinguished conferees and ardent survivors of a long painful day:

My name is Martin Lang. I am Director of the Bureau of Water Pollution Control.

I don't have a sheaf of notes. I don't have a prepared address. I have one little card here with some undecipherable hieroglyphics on it.

This may or may not be attributable to the fact that Commissioner Feldman gave us a scholarly dissertation on the Dead Sea Scrolls during lunch.

It says, as far as I can make out, "Look the audience in the eye, get it over with fast, don't offend Commissioner Stein" (laughter).

However, let me take advantage of the fact that we have this map here to give you a brief walk through the plants of New York City.

You know, I have heard a lot here before about stipulations, consent decrees, legal hair-splitting. I always remind myself of the fellow who said, "You come up here for talk and you want a little action. Here's where the action is, right here in New York City."

Look at those plants in the Bronx. The Hunts Point plant went on stream in 1952, designed for step aeration, and is now being expanded. It is in final design right now. The site has been acquired for additional expansion. It was designed for step aeration, but we are going to beef up the facilities.

We are sure that even the expanded plant can routinely run step aeration the year round, and we will have chlorination facilities provided. In fact, on a purely interim basis, right now we are putting in hypercholorination facilities of effluent disinfection.

Next to it you see the red area with the Wards Island plant.

Mr. Stein has been a little wrong. This is not a unique thing, exporting Manhattan wastewater. Since 1936, Manhattan wastewater from the Upper East Side has been flowing to Wards Island.

The plant went on stream in 1936,

Commissioner Feldman put it in operation then--I'm sorry that dates you--and it was designed for what was then the highest degree of treatment. The concepts were not that well defined in the late twenties when the designs were created.

However, at this time it is going to be expanded to take in a greater flow and step aeration the year round, with sludge thickening and effective disinfection.

The green area we have been talking about is the lower part of Manhattan for which the interceptor is already built. The tunnel is already built. The plant is waiting there for it in Brooklyn, and all we have to do is complete the construction of the pumping station. The cofferdam has already been created and based. We are pouring the bottom slab. There has been some delay, but we should move ahead now.

The West Side of Manhattan, the white area, is the North River plant, and Commissioner Feldman told you how we are comparing apples and oranges when we are talking about the 1964 or 1965 Compact. We are talking about a moving target. We are talking about a plant that underwent a terrific transmutation and which, as Mrs. Faust pointed out in behalf of Congressman Ryan, became the catalyst for upgrading the West Side of Manhattan from 45th to 145th Street.

Going to Queens, the Jamaica plant went on stream in 1943. I am very proud to tell you that in the summer of 1968, for the first time, it ran actually on a step aeration process, producing a sparkling disinfected effluent.

Next to it and north of it is the Tallman Island area, being expanded and being upgraded in its third successive expansion, and, again, it is in the hands of the consultants now for final design and is intended to create a plant with a capability of giving the highest degree of secondary treatment the year round.

Next to it we have the Bowery Bay plant handling strong industrial wastes. It went on stream in 1957. I well remember, because I helped put the plant in operation. Now we are expanding this plant, even with the strong industrial wastes, to take care of their step aeration the year round and to provide effluent disinfection.

Next to that, of course, is the Newtown Creek, which is already flowing to the plant.

The brown area is the 26th Ward plant which went on stream in secondary treatment in 1951, and is being expanded and upgraded to provide year round step aeration.

Then you have the Coney Island plant, which has undergone a series of metamorphoses since the early years of the century, and is now also in the hands of the consultant for redesign to provide the best facilities for step aeration, minimum community impact, exotic facilities for sludge handling, digestion, thickening and so on.

The Owl's Head plant which only went on stream in February 1952, is also being redesigned to expand and to provide step aeration.

In Staten Island the two small plants are being converted to two super plants.

Now, these are all commitments and are under way now. In order to do this, Commissioner Feldman said we would have to use every means at our disposal, and we did, because our pool of talent began to swing in the City. We reached to every best consultant talent available in the United States, so, in some cases, this is being done by New York City outfits, in another case by out-of-state consultants.

For example, Camp, Dresser & McKee of Boston are doing Tallman Island. Greeley & Hansen in Chicago is doing two of the plants, Oakwood Beach and Coney Island, and Metcalf & Eddy of Boston are doing Rockaway.

This is an era of prosperity and these consultants are busy. Nevertheless, we didn't quit any of our standards. We sought the best talent wherever we could find it. We wanted to start these people on letters of intent even before formal contracts could be drawn up.

Now, you see, I come up here at the tail end of the batting order for the City of New York. Coming up at the tail end, sometimes they come up there with the bases loaded and two out, but I had a couple of home runners that had cleared the bases, so I will just try to pick up a few items that were referred to before and clear up some misapprehensions.

As to alternate procedures, you all know and have heard about this very exotic project in Jamaica Bay, which we hope to be the prototype for the whole New York Harbor area, with total hydraulics, total study of all the biota, waste input, and creation of mathematical models.

It is being done in Jamaica Bay now. Now, we could adopt an attitude like this: We could say, Mr. Stein, that since we are soaking up all our energy and effort and manpower just to create those projects on the chart, let's close the door to our proud tradition of trying to devise new processes, trying to improve existing processes.

Well, we have not done that, so we are moving ahead on both fronts, and, therefore, even while building the plants around Jamaica Bay, we are nevertheless exploring the ultimate alternates which might have tobe an ideal combination of inshore or far-offshore outfalls, a combination of varying degrees of treatment, not excluding tertiary treatment, if it is so indicated.

In other words, New York City, in the late 1960's,does not want to be accused in the 1980's and 1990's.

Now, I have to give you, and of course your patience is exhausted by now, a brief account of our stewardship at this Bureau, because at this point in time we are treating, Mr. Sullivan, one billion gallons a day, day in and day out, a massive project in itself, even divorced from the necessity of all the expansion programs.

While we are doing this, the citizens of the City of New York are still putting their money where their convictions are.

Remember, Commissioner Feldman said that long before any cornucopia opened up in Washington and Albany, it was the taxpayers' own money that built the system.

Well, in an effort to give Mr. Colosi the opportunity to state the proud achievements of the Interstate Sanitation Commission area, we have done this only recently, while the State of New York, under some fiscal stringency, said, "Well, I'm going to take away $300,000 of money from Owl's Head" and like a very humble Uriah we responded by saying, "Fine. Meanwhile, we are going to bull through this contract," and we did start the hyperchlorination at Owl's Head this summer.

I wouldn't be a normal human being, Mr. Stein, if I didn't stand on the dock of Owl's Head and see our effluent streaming out there disinfected, secondary treatment, and going out to comingle with the effluent from some of our neighbors within sight, undisinfected, without secondary treatment.

Again, the State of New York said, "I'll tell you what. Newtown Creek plant, we can't see fit to give you any aid on it this year. Things are a little tough in Albany."

We blithely responded, "Fine, we'll go ahead and install all the facilities," again, for the first time in history, to practical hyperchlorination on the East River.

In a similar vein, propelled by the same swift kick in the pants, we have put in and even improvised hyperchlorination at the Port Richmond plant, put in hyperchlorination facilities at Bowery Bay, so you see that even under the stringency and drive of the expansion program, we are putting ahead and advancing our present state of the treatment.

I would like to point out one other thing, gentlemen.

Commissioner Stein alluded to his concern about Newtown Creek. It was our practice always to come out with a new process after it had been tried in plan, but there is, as Commissioner Feldman pointed out, a very sophisticated pilot plant in operation now in our Jamaica plant, looking toward a new technique specifically aimed at Newtown Creek, and, given the time and manpower, why, we hope again to devise some techniques which may bring the Newtown Creek up to the standards of the other plants.

I just want to make a few comments and I will get off.

I would like to reassure some of the other speakers that talking about combined sewers, this need was mentioned for a new policy about separation of sewers. Commissioner Feldman has developed this policy. In all the new areas of the City we do separate the sewers.

However, many of the older portions of the City are constrained to pre-existing combined sewers, and we are attempting to cope with that with the prototype auxiliary control plant, the first of which is under construction now.

The same speaker alluded to the need for surveillance of regulators and overflow points on combined sewers. We do have five crews steadily employed in just such surveillance. The need was responded to for studying the impact of such overflows on the receiving waters in our Jamaica Bay study.

We have probably the most exhaustive

documentation of a series of storms as to flows, concentration, chlorine demand, bacterial input, and so on, and we hope to add a great deal to the data in that brochure which was distributed at the beginning of this meeting.

We are responsive to this phenomenon of community impact, and in the creation of our new facilities we try to blend them with the community. For example, in Port Richmond we are going to create an eight-acre deck on the plant, which will be amenable for community use. You know about the Riverbank development on top of North River.

Another speaker alluded to urban fishing. We are the greatest exponents of this. We are creating a new combined recreational fishing dock and sludge vessel dock in the deep waters off the 26th Ward plant, and in the design of our auxiliary plants we are actually trying to create windows on the water, create a flat deck for recreational use, and access to the waterfront.

I would like to state one other thing if I am not imposing on you.

In the course of this presentation, you have heard this morning and afternoon a sort of dispersion of effort with independent studies going on by the New York State Department of Health, the Interstate Sanitation Commission, the FWPCA, the Corps of Engineers, New York City, the State University, and many others.

We would look to leadership from the Federal Government, Commissioner, to integrate all these efforts to the best advantage of all the municipalities concerned.

Thank you.

MR. STEIN: Thank you.

Well, I'll tell you: If New York City kept Commissioner Lang down to 15 minutes, I believe it can meet any time schedule you set out (laughter).

One more thing, Marty: I think you have strayed from your birthright. You grew up in Williamsburgh, just like my wife, and if you think shifting something from Manhattan to Wards Island is export, we never thought that back in Brooklyn. We thought way out it was bad when you gave it to them.

MR. LANG: Actually, it provided a very persuasive argument when we were meeting with the North River community to point out that Manhattan had been especially favored in exporting of most of its wastewater.

MR. STEIN: Thank you.

Are there any other presentations from New York?

MR. METZLER: Mr. Kent.

STATEMENT BY
MR. FREDERICK S. KENT
ASSISTANT COMMISSIONER
ENVIRONMENTAL HEALTH SERVICES
NEW YORK CITY HEALTH DEPARTMENT

MR. KENT: Mr. Chairman, distinguished conferees, ladies and gentlemen:

I am Fred Kent, Assistant Health Commissioner for Environmental Health Services in the New York City Health Department.

I wish to make a brief statement relative to the policies of the New York City Health Department with relation to the water pollution program in New York City.

Health Department's Responsibilities in the City's Water Pollution Control Program

The Department of Health was given its present general powers when Article 145, Water Pollution Control, of the New York City Health Code, was enacted.

The aim of this article is "to give the Department authority to control sources of pollution and to cooperate with other governmental agencies, in the development of pollution abatement programs."

The Introductory Notes to this article state:

> "In order that the Department of Health may carry out its obligations under Section 556(a) of the City Charter 'to regulate all matters affecting health in the city,' the provisions of this article of the Code require the Department to pass on plans for all proposed pollution control facilities. It is hoped that this procedure will result in fruitful cooperation between the Department of Health and the Department of Public Works, as well as other departments, so that pollution control facilities, which represent a considerable capital expenditure on the part of the City, will prove of maximum benefit to the health of the people, in addition to meeting the necessary requirements of sound sanitary engineering. The Health Department's unique contribution to pollution control is its long experience in safeguarding health by controlling potential

sources of disease."

The Health Department is thus responsible for (a) the sampling and classification of all bathing waters, (b) the review and approval of all sewage treatment plants (either municipal or private) and drainage plans, (c) the surveillance of operations of all plants, (d) the locating and disposing of all illegal direct sewage discharges (whether private or industrial) and (e) all other activities which affect either directly or indirectly the quality of City waters. This includes the broad functions of research and planning.

In order to carry out these programs and others, on July 1, 1951, the Bureau of Sanitary Engineering was officially established. The Health Department, through the Bureau of Sanitary Engineering, has conducted and is still carrying out a comprehensive Water Pollution Control Program.

The various phases of this program are listed below:

A. Beach and Harbor Water Sampling

Each year, the Bureau samples the beaches of the City of New York, in order to determine the current status of the quality of the beach areas not covered under Article 165.05 of the Health Code which specifies areas in which bathing is prohibited. This activity is dictated by the policy to classify the beaches adopted by the Board of Health in 1948 which states in part:

> "Whereas it is necessary in the public interest to institute standards for legal administrative guidance of the Commissioner of Health in relation to the pollution of waters at bathing beaches."

In January 1968 the City Council passed a law amending the Administrative Code which now requires the posting of polluted public beaches. Beaches to be posted "Polluted Waters--Not Recommended for Bathing" are selected by the Department of Health on the basis of sampling results and sanitary surveys. As a result, the public beaches in Coney Island from West 29th Street to Sea Gate and in Staten Island from South Beach to Graham Beach were so posted.

B. Sewage Treatment Plants (Municipal)- State Aid - $4,000,000 Annually

The New York City Department of Health is responsible for the inspection and evaluation of the City's thirteen municipal sewage treatment plants under two mandates; (1) Article 145 of the Health Code, which calls for general regulation, and (2) State of New York requirements as part of its State aid--Operation and Maintenance Program.

Under the provisions of the Pure Waters Bond, the State enacted a law which provides grants to compensate cities for one-third the cost of operation and maintenance of their treatment facilities. Sewage treatment facilities are operated by the Department of Water Resources. The New York City Health Department, as a result of its inspections and analyses, certifies to the State Health Department that these facilities are operated according to their design and/or capabilities, comply with local, State and interstate regulations, and are not affecting the receiving waters adversely. The City Health Department is thus responsible for certain functions relating to this program, including the review of all applications as well as the conduct of inspections of all municipal sewage treatment plants.

C. Treatment Plant Plan Review

Under Article 145 of the Health Code, the Department of Health passes on plans for all proposed pollution control facilities. These include sewers and sewerage systems, treatment works, disposal systems and outlets, as well as municipal sewage disposal systems. By definition, the latter include sanitary, storm and combined sewers, intercepting sewers, intercepting collector sewers, sewage treatment or pollution control facilities, drains and other facilities, connections and equipment for the conveyance, treatment and disposal of sewage and drainage operated by departments and offices of the City.

D. Industrial Wastes Enforcement

The Bureau of Sanitary Engineering is accelerating its Industrial Wastes Enforcement Program. The purpose of this program is to eliminate all sources of industrial and institutional wastes. It is estimated that there are some one hundred (100) such polluters presently discharging wastes into our waters. The program calls for elimination of these pollution sources by 1972.

The Bureau is presently working with the industries, and the Department of Water Resources within the framework of the State Health Department's comprehensive pollution abatement program.

We are pleased to report that significant progress is being made in this program. A number of our large polluters have either started construction or have submitted abatement schedules for our approval. Two large industries Proctor & Gamble, Staten Island and F & M Schaefer, Brooklyn, have initiated construction. Both industries are faced with the large tasks of separating their clean (storm) and dirty (industrial and sanitary) lines so that City sewer hook-up can be achieved. Complete abatement at Schaefer is expected shortly. Abatement at Proctor & Gamble, however, is dependent upon the municipal interceptor schedule.

Nassau Smelting, Staten Island and Pepsico, Queens, have both submitted abatement schedules. Both call for complete abatement by 1972.

The American Sugar Company has submitted plans for the abatement of pollution. Final approval, however, has been delayed due to the questions raised by their large thermal load.

A number of other industrial polluters have either hired a consulting engineering firm to evaluate their problem or are in the process of accepting bids for construction. These include Irving Subway, Chelsea Fibre Mills, D. D. Williamson and Manhattan

Adhesives.

These industries I have just mentioned account for over 90 per cent of the total industrial waste load.

E. Private Sewage Treatment - Operations Investigation

The Bureau conducts investigations of operating procedures at private sewage treatment plants. During such investigation, a general survey is made and effluent samples are taken. This function is outlined in the Health Code Section 145.07 - Operations:

> "The owner or person in charge of disposal facilities shall maintain it in good order and repair. The disposal facility shall be operated so as not to create a nuisance or health hazard, and it shall be operated in accordance with any terms contained in a permit or approval issued pursuant to Section 145.03 or in an order served pursuant to Section 145.05."

The Bureau investigates the operation of some 20 plants regularly. It is anticipated that the number of these plants will be substantially increased in the future due to the extensive development of Staten

Island. There are presently plans on the boards for plants to serve community developments, schools and hospitals.

F. Drainage Plans

Under Section 683a4-1.0 of the Administrative Code, the Department reviews and passes upon all drainage plans with reference to the potential effect upon receiving water. Article 145 also provides authority to the Department to pass upon plans for sewerage construction.

In conclusion, we in the New York City Department of Health, as representatives of the people of the City, will continue in the future as we have in the past, our task of protecting the health and well-being of the public. We will continue to cooperate with all other water pollution control agencies (State, Interstate and Federal) to assure our citizens the improvements demanded by a public awareness for a cleaner environment and made possible by modern technology.

Thank you.

MR. STEIN: Thank you for an excellent statement, Mr. Kent.

I am sure New York feels as lucky as I do to have you up here. It's wonderful to see you again.

Are there any comments or questions?

MR. METZLER: Yes. I would like to first compliment Fred Kent on this excellent statement.

I am interested in the matter with respect to the bathing beaches in which you post the bathing beach, but our upstate friends have a situation where you put up signs saying "Bathing Prohibited" and another sign out in front which invites people in, is there any enforcement of the beach posting?

MR. KENT: No. I would say the beach posting this year was carefully worked out with the Department of Parks, Recreation and Cultural Development, to make sure we did not have a conflict. They were all placed together with the full knowledge that what we are trying to do is certainly not to cut out a recreational facility which might still be used for some bathing and other types of recreation, and minimize the exposure of the individual, and, therefore, this is a program that has been actually enforced this year.

MR. METZLER: What you are saying is that you post it?

MR. KENT: Yes.

MR. METZLER: But you don't prohibit people from going in? They go in at their own risk?

MR. KENT: Yes.

MR. METZLER: Do you provide lifeguards there?

MR. KENT: The Department of Parks provides the lifeguards with the precaution that any municipality would that would be held liable in case an individual was killed.

If he takes his own risk, he is still protected by law. I think the Department has the same type of responsibility to provide the same coverage here.

MR. STEIN: Is there any other comment, gentlemen?

(No response)

MR. STEIN: If not, thank you very much.

It is exactly 5:00 now. We couldn't have timed it more closely.

We will stand recessed until 9:30 tomorrow, when we will hear from New Jersey. If there are any other people who want to make a statement, we will hear them after New Jersey.

(Whereupon, at 5:00 p.m., an adjournment was taken until June 19, 1969 at 9:30 a.m.)

* * *

JUNE 19, 1969

9:30 a.m.

MR. STEIN: May we reconvene?

I am not quite sure that New York State has completely finished with its testimony.

Mr. Metzler, do you have any more?

MR. METZLER: Well, I remember, Mr. Chairman, that yesterday we deferred the testimony of Mrs. Farrell Jones, who is Chairman of the Water Resources Committee of the New York League of Women Voters, but may I be permitted to check through this list to be sure that there are not others?

MR. STEIN: Surely.

MR. METZLER: Why don't we go ahead with Mrs. Jones, if we may, and by the time she is finished, I will have checked the others.

MR. STEIN: Thank you.

MR. METZLER: I might say that the League of Women Voters in New York State played a major role, as they have in many other places in the United States, in calling public attention to the need for water pollution abatement and toward supporting and organizing local officials to attack this problem, so we are very grateful because this is one of the most imporant witnesses we have from New York State.

STATEMENT BY
MRS. FARRELL JONES
WATER RESOURCES CHAIRMAN
LEAGUE OF WOMEN VOTERS OF NEW YORK STATE

MRS. JONES: Thank you very much. I am Mrs. Farrell Jones, Water Resources Chairman and a member of the board of management of the League of Women Voters of New York State. The League of Women Voters has been actively engaged since 1956, in studying, testifying, educating our members and, to the best of our ability, the public on the need for "comprehensive long-range planning for conservation and development of water resources and improvement of water quality." The quotation is part of the national consensus of the League of Women Voters reached in 1960. The consensus is as valid and the need is as great today as it was nine years ago.

Secretary Klein was kind enough yesterday to commend the League for its steadfastness in appearing and testifying at hearings around the country. We only hope that our fight for clean water will not have to equal our 20-year record in fighting for permanent personal registration.

We heard testimony yesterday from Federal, interstate, State and New York City officials and agencies on what has been done in abating the pollution of the Hudson River and the interstate tributaries during the past few years. While it is obvious that considerable progress has been made, it is also obvious that the great promise of 1965 of the Federal Water Pollution Control Act and the New York State Pure Waters Program may not be fully realized unless the missing ingredient is reinfused into these promises. The missing ingredient, of course, is money. Money to complete the construction and upgrading of treatment plants to prevent the discharge of raw or partially treated sewage into these waters; and money to investigate, evaluate and install some of the imaginative remedial programs for combined sewer overflows, storm water runoff pollution, perhaps tertiary treatment for removal of nutrients, and alternatives to sea dumping of sludge and industrial waste.

The League of Women Voters is firmly

committed to the construction and upgrading to effective secondary treatment of sewage treatment plants discharging into these estuaries. All the voluminous standards in the world will not improve the waters, unless the effluents from these plants are free from bacterial and viral contamination, suspended solids and nutrients that promote algal growth, and a biochemical oxygen demand that disturbs the natural ecological balance of the receiving water. We in the New York State League are also aware that these waters lie in the region surveyed as Basin 1 by the American Public Works Association for FWPCA, and reported by them in 1967 to have the lowest figure for secondary treatment plants in the Nation--ten per cent.

Therefore, we realize that cost will be high. We feel that the public and through them the United States Congress must be made aware that the total gap of one billion, 512 million dollars between the amount authorized for sewage treatment plant construction in 1965, and the amount appropriated (if the appropriation for fiscal 1970 is only $214 million out of a possible $1 billion) is abominable. If you read the New York Times tomorrow maybe that may even be in jeopardy. We feel that this is abominable. Even if the $1 billion were appropriated this year, it is not nearly enough, since the States reported on March 31 that pending applications for Federal sewage construction grants totaled $2-1/4 billion. Our national priorities must be re-examined.

If the pollution caused by inadequately treated dry weather flow of sewage were to be abated tomorrow, we would still be faced with the problem of combined sewer overflows and urban storm water runoff. The programs now being investigated under FWPCA grants and contracts may provide the answer. We are hopeful that projects such as the Spring Creek Auxiliary Pollution Control Project will prove an effective solution in areas of the city where land use allows for the construction of these holding basins. We agree with the report presented yesterday by Mr. Bromberg of FWPCA that more research will have to be done to find solutions for highly developed sections like Manhattan Island. This research and subsequent construction will be costly. Whatever the cost solutions must be found, so that more and more beaches in our urban areas can be opened to the public, rather than closed. It is a factor in the survival of our cities.

There is a great need for a massive educational attack by all levels of government, the news media, and organizations such as the League. We must convince the public and industry that solutions to the problems of our vast potable water supply being diminished by pollution, and our water based recreational areas dwindling, even as our population increases and shorter working hours allow more time to utilize these areas. We cant wait for another drought to arouse our citizens.

Thank you for the opportunity to testify here today.

MR. STEIN: Thank you, Mrs. Jones, for an excellent statement.

Are there any comments or questions?

Yes, Mr. Metzler?

MR. METZLER: Well, there is a question that I would like to ask about, because it seems to me that as I view the overall program in New York probably the area in which we are still putting less effort and manpower--we are so involved in the promoting of design and approval of design and approval of construction, that I think the effort perhaps is not as great as it needs to be in backing up local officials and in promoting projects where the local officials are moving but not rapidly enough.

Do you have any suggestions as far as the New York State Health Department is concerned for bolstering the effort and how we may work with the League in bolstering these efforts of the local chapters, such as yours?

MRS. JONES: I am answering the first part of your statement.

I don't believe that the problem lies with the State. I believe that it lies with the fact that the Federal Government has promised and did promise a certain amount of money to help in construction costs.

The New York State communities for the most part would be eligible for 55 per cent Federal money. That would leave 30 per cent for the State and 15 per cent for the local community to raise.

Right now, the State is paying 59 per cent, the Federal Government one per cent, leaving 40 per cent for the local governments. They are not moving, because they keep waiting and waiting for the reduction to 15 per cent.

I don't know what the solution to this is. My only idea is that we have got to, as I said in my final statement, convince the public that this is not a far off problem and that it is with us now.

I feel personally that we have time to reach the moon. I don't know whether we have time to save our cities.

MR.METZLER: Thank you.

MR. STEIN: Are there any further comments or questions?

MR. KLASHMAN: Mrs. Jones, I just want to clarify the record.

The statement that the Federal Government is only putting up one per cent is not completely true at the moment. I mean, it has changed a little bit.

As a matter of fact, in many cases, in the smaller communities--that is,smaller in terms of New York State--the Federal Government is putting up the full 30 per cent. On the larger projects what you say is true, but in many projects now the Federal Government is putting up 30 per cent.

MRS. JONES: Is this true in New York State?

MR. KLASHMAN: I am talking about New

York State.

MRS. JONES: Fine. I'm glad to hear it.

MR. STEIN: Mrs. Jones, before you leave, I think that the statement that you put forth is a very sophisticated one, but let me give you a comment in the sense that we see it.

While there has been a Federal authorization, obviously in the Federal Government or in the States until the money is appropriated the money is not available.

I know a lot of people not only in New York State but in other States have talked about Federal promises. I speak as an old hand at Government. I don't know that any authorization is what I would call a Federal promise.

Mrs. Jones, if you totaled up the amount of authorizations in basic legislation that the Congress has made and you equated that with the budget, you would find that this runs something many times exceeding that.

As I look at it, when you have an authorization, in effect, all you have is a hunting license. Then you have to go out. I don't know that that is an appropriation.

Again, here is the problem as I see it here: I think we have a very acute problem in the metropolitan area of New York and, as a matter of fact, in dealing with the whole Hudson River in the area of this conference from the Albany-Troy area down.

I think the cities here and New York State in particular have recognized the fiscal facts of life. I do think New York State has come up with a program for treatment of the sewered communities.

This does not mean that we are going to take care of the stormwater problem. We do not have a definitive answer right now as to sludge disposal, because these are things we have to work out, but we do have a time schedule to bring everything up to roughly secondary treatment and chlorinate the effluent.

New York has one, New Jersey has one, and given the fiscal facts of the present time, they believe, and here is what we are looking for within these facts, we have the financial resources to meet this schedule.

I do think again, to be realistic, that we can't wait for extra money to come from places where we do not have any assurances it is going to come. We have to get moving with this program if we are going to make particularly a metropolitan area such as New York a living reality, so that people can just stay around there and live there.

The very fact that 50 per cent of the potential beach area in the metropolitan areas is posted as polluted is just the kind of thing that you have to recognize we cannot live with.

I appreciate your remarks generally about money that has to be available, but the forum here is really a forum of technical people who, given the financial limitations that we have, are trying to work out the best kind of program we can and to see what kind of results we can achieve.

I just have one more point, because I know the League has come up with this again and again.

Even with the best kind of financing you would have from the Federal Government, I do think--and Commissioner Lang is there and has recognized this here for many, many years--with the kind of projects we have in the big cities, unless we have a drastic change, they very well may get a relatively small percentage of Federal funds. I think the program was designed this way from the beginning.

When you look at the 30 per cent grants we had, or the 40 or the 50 per cent grants, if you would look at a project such as we have in New York City, we have the west side plant, $220 million. The total Federal appropriation is $214 million.

With a $220 million project, how much can you expect?

I think if you would look at cities, such as Chicago, St. Louis, Detroit, Philadelphia--you name them--and try to think of the terms of the financial participation of the Federal funds, you will find that in all these cities it is always considerably less than the 30 per cent.

Now, I say this to the League because I know your proposal in your statement is very sophisticated. It was never contemplated, even at the best, that the Federal program as conceived would be the kind of program which would necessarily be available for a 55 per cent grant, and that funds should be available for these real large City projects.

This may change, but I think the program historically started with grants for Cities where the limit was $250,000 at first, and then it went up to

$600,000. Then we raised it. It started out as a small city project and was raised.

I don't think that anyone has come up with anything in the program yet that is going to result in substantial participation in terms of percentage for these tremendously large city projects. This should be made clear, because if we wait for the money to come we may be living with pollution for a long time.

We are trying within these limitations to come up with a realistic time schedule and move forward as best we can.

Thank you.

Mr. Metzler?

MR. METZLER: Your extension of Mrs. Jones' remarks leaves me in a position that I simply can't refrain from further commenting. There are two or three points I think that are important.

The first is that local officials and lay organizations are not as sophisticated in interpreting the difference between authorizations and appropriations, and that it is the local officials and lay people we are working with.

These folks see the offer of 55 per cent aid from the Federal Government and they regard the commitments which both the Congress and President Johnson made as Federal promises.

I can't speak for the League of Women Voters, but I will speak for the officialdom of New York in trying to convince our Congress, our representatives of Congress, to do everything they can to make the Federal contribution more meaningful. That is our problem.

What I want to say to you as a top official of the Department of the Interior is that we want your Department's support for these funds.

I want to say also that as far as I know, this year for the first time since the program has been transferred from HEW to Interior you recommended a big authorization, whereas previous administrations in Interior have said that the States could not spend it.

But we also want your support on retaining the prefinancing provisions that are in the Federal legislation, because New York and some other States now, about ten I think, have the prefinancing provisions, and if these are knocked out, I can assure you that we will regard this as reneging on a promise.

In other words, we want your support, and we have gotten more of it in the last few months. We want this continued, and expect to put all the support we can with Congress and place the priority high enough on environmental clean-up and specifically water pollution abatement to get something meaningful in the way of construction grants, rather than the niggardly $200 level that we have been hung up on for several years.

MR. STEIN: Thank you, Mr. Metzler.

Are there any other comments?

(No response.)

MR. STEIN: Before we go on, I understand Ellen Krieger of Senator Javits' office is here. Miss Krieger, do you want to make a statement?

MISS KRIEGER: No.

MR. STEIN: Thank you very much for coming.

Mr. Metzler?

MR. METZLER: I have exhausted the list of those of New York State who have advised us that they wanted to appear.

Unless I see someone raise his hand or stand up, I will assume this exhausts the witnesses from New York, Mr. Chairman.

MR. STEIN: Thank you.

I have a letter addressed to me from the New York State Society of Professional Engineers, dated June 12, 1969, which at the Society's request should be included in the record.

(The above-mentioned letter follows.)

446A

THE NEW YORK STATE SOCIETY OF PROFESSIONAL ENGINEERS
INCORPORATED
METROPOLITAN CHAPTER PRESIDENTS' COUNCIL
500 FIFTH AVENUE
NEW YORK, N. Y. 10036

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Bronx Kings New York Queens Richmond

June 12, 1969

Mr. Murray Stein, Assistant Commissioner
Enforcement Department
Federal Water Pollution Control Administration
1921 Jefferson Davis Highway
Arlington, Virginia 22202

Re: Hudson River
Conference, June 18-19, 1969

Dear Mr. Stein:

It has been brought to our attention that your administration will hold a conference in connection with the pollution of the interstate waters of the Hudson River and its tributaries. Unfortunately, the annual convention of our Society is held in Massena, N.Y. on the 18th through the 21st and consequently we cannot be present at your conference. Nevertheless, the subject is of such importance that we feel it necessary to submit our views in writing. We hope that due consideration will be given to our statements.

The New York State Society of Professional Engineers (NYSSPE) is the recognized spokesman for the engineering profession in the State of New York. Its membership consists of professional engineers licensed by the State Education Department for the specific purpose "to safeguard life, health and property". In the Metropolitan area of New York City there are over 12,000 professional engineers so licensed.

The Metropolitan Chapter Presidents' Council consists of the presidents of the five county chapters in the City of New York.

Since water pollution directly affects the life, health and safety of all residents of this city, we are deeply concerned about the existing conditions and lack of any tangible improvements in the last several decades.

It appears that water pollution is universally considered as detrimental to the ecology of the entire area. Consequently, we support any effort and any action which will lead to cleaning up the pollution of the Hudson River, the Upper Bay and Lower Bay.

The sources of pollution have been known for many years. It is true that some new pollutants have been added in recent years. It is also recognized that some of the effluent are being treated. However, the composition of effluents has changed and therefore, the amount of pollution has been steadily increasing in the last decades.

It is inconceivable that the richest country in the world cannot clean up its waters while some of the poorer countries have been doing it for the last 50 years or more.

We do not believe that the delay in eliminating this deplorable situation is due to the lack of funds. The bond issue approved by the residents of New York State and the federal contributions are sufficient to develop treatment plants for processing 75 or 80% of the major pollutants. Unfortunately, some communities and some industries are not capable, for one reason or another, of proceeding energetically with the necessary projects.

We respectfully recommend that a time schedule be established in order to purify the Lower Hudson within the next ten (10) years.

We also recommend that the State and/or Federal agencies should take over the compliance with the schedule whenever a local community or industry is delinquent by one year or more.

Should the above mentioned take-over require special legislation, we recommend that such a law or laws be passed without delay.

We also respectfully recommend that consideration be given to developing a system of fines. Such a system should provide for progressive increase of fines. The first year the violator should be penalized at the rate of not less than $10. per thousand cubic feet of untreated water discharged into the Hudson or any of its tributaries. In any subsequent year, the fine should be increased by $10. per thousand cubic feet.

We respectfully recommend that any commission, agency or authority formed for the purpose of regulating and controlling water pollution problems be headed by licensed Professional Engineers.

To summarize, we wholeheartedly support any action leading to cleaning up the waters of the Hudson River. We do recommend a definite schedule for such a program and methods of enforcing the schedule.

Respectfully submitted,

METROPOLITAN CHAPTER
PRESIDENTS' COUNCIL

Joseph D. Lewin, P.E.

JDL/pbg
cc: Bronx
Kings
New York
Queens
Richmond
NYSSPE
Comm. M.M. Feldman, P.E.
Files

Let me tell you the schedule, as I see it.

We will call on New Jersey. I suspect we should be completed with the statements this morning. At that time the conferees, depending on when we finish, will go into Executive Session, and we will give you an estimate of when we will have an announcement, which we confidently expect to be today before we adjourn the conference.

But I would suggest that anyone in the audience believing that he has something to add or wishing to make a statement should decide that he is going to do that while the New Jersey testimony is being given so that you can get your name up here and be called on, if that is your desire.

With that, we will call on Mr. Sullivan of New Jersey.

STATEMENT BY
MR. RICHARD J. SULLIVAN
CONFEREE AND DIRECTOR
DIVISION OF CLEAN AIR AND WATER
NEW JERSEY STATE DEPARTMENT OF HEALTH

MR. SULLIVAN: Thank you, Mr. Chairman.

My name is Richard Sullivan. I am Director of the Division of Clean Air and Water, and I am here at the conference as the representative of the New Jersey Department of Health.

We consider ourselves to be guests at this conference, not hosts, so we have not invited anyone to appear to make a statement. I would not like this fact, however, to deprive any person representing himself or any organization in New Jersey of the opportunity to speak at this hearing.

I have been informed earlier this morning that a spokesman is here for an organization in New Jersey and would like to testify, and I will call him in a moment, but upon the completion of his testimony I will ask if there is any other person from New Jersey who would like to have his views made known, and I will be happy to invite him to the podium to do so.

Before calling the other witness, there is a brief statement I would like to make myself.

I have an official statement, which I will paraphrase somewhat in my own comments here. The statement says I am happy to be here. The truth is our Department picnic is today (laughter), and is a much more convivial occasion than this one is, and to recite the language in my statement would be hypocrisy.

In our view, if cleaner water is to be the measure of progress made since the last session of this conference, then there hasn't been very much. The Hudson River is somewhat less polluted than it was in September of 1967, but most of the progress that needs to be made is still to be made.

We have had a presentation by Thomas Glenn of the Interstate Sanitation Commission of individual improvements made that affect water quality in this area, the additional treatment where none was provided, and the provision of post-chlorination of effluent for the purpose of disinfection.

We still have substantial quantities of inadequately treated wastes coming from treatment facilities in New Jersey, and we still have substantial quantities of wastes receiving no treatment at all coming from the City of New York.

I was pleased to be able to witness the presentation made by New York as to the steps it proposes to take and a fixed time schedule to correct its problems. I hope it meets this schedule and I hope that we are able in New Jersey to make equivalent improvements.

It seems to me that the most appropriate focus of this session is not the progress that hasn't been made yet, but the factors that will govern whether or not satisfactory progress will be made hereafter, and whether or not it will be made in a reasonable and predictable time.

In our opinion, the two key elements here are enforcement and costs.

Throughout its territory, New Jersey has attempted to construct an orderly systematic scientific enforcement effort. Water quality standards were drawn, and so were our clean water objectives for all of our nine thousand miles of streams, our inland waters, estuaries, bays, tidal waters and coastal waters. All of the waterways of the State have been classified as to the official objectives to be sought through this enforcement effort.

To make this achievement possible, treatment regulations have been promulgated, binding upon any person who would put wastes of any kind into any waterway in New Jersey. Approximately 250 administrative orders have been issued requiring conforming with these regulations and setting forth a detailed time schedule for compliance.

These orders have been issued to municipalities, joint meetings, authorities, industries, school boards, shopping centers, and other entities that are now causing wastewater to enter a stream either without adequate treatment or without treatment at all, and, in any event, failing to meet the treatment requirements of the Department.

Throughout New Jersey some of the industrial or private recipients of these orders are not meeting the time schedule. Most are, but almost all of the governmental entities are failing to meet the time schedules set forth in these orders, not just in the region under consideration, but throughout our State.

I have presented as an appendix to this statement, and I will not recite it here,which would be inappropriate, a list of the entities that are located within the scope of this Hudson River Conference which have received orders with an indication of the timetable for compliance contained in those orders.

Two industries have been added to the list since the last session of this Conference. For one of these, the due date on his order has not arrived. For the other, we are in active discussion, and the prospect of early compliance is very good.

With respect to the governmental agencies, all eight, except the Passaic Valley Sewerage Commissioners, have complied with our directive to provide effective post-chlorination of the effluent in the period of 15 May to 15 September.

So far as the other steps for compliance that are contained in these orders is concerned, North Bergen, in response to Step 3, has submitted preliminary plans which are now under review by us. The Jersey City Sewerage Authority and the City of Hoboken have submitted reports of design as required by Step 2 of our administrative orders. Bayonne, Edgewater, the Passaic Valley Sewerage Commissioners, West New York and Kearny have not met any of the steps contained in the orders.

It is our policy as the enforcement agency, and that is, after all, our essential function in the administration of the remedial statutes, to invoke the sanctions provided by the statute against those who are bound by administrative orders and who failed to take the steps reasonably necessary to comply with such orders.

Three diligent and competent deputy attorneys general serve us in handling air and water pollution cases for our division in the required court actions.

Since the last session of this conference, 60 water pollution cases have been brought to the courts. Where we have sought an injuctive order or penalties, or both, for failure to observe the requirements of administrative orders and the statutes that enable them, the courts have been most responsive. The State has not lost an air or water pollution case in the two and-a-half years the Division of Clean Air and Water has been in existence. In every case in which we sought an injunctive order of our Superior Court, an injunction was obtained.

It is a departure from the traditional method of remedy seeking in the courts. In New Jersey this past year, in order to deal with what we considered to be a drastic pollution problem, we sought an unprecedented drastic remedy. The case involved nine communities in the County of Morris whose wastes were being inadequately treated before entering the Rockaway River, which is a tributary of the Passaic.

Because of the hazard to health created by the pollution of this stream, we asked the court to forbid all nine of these towns from the issuance of any building permits until adequate measures are made to dispose inoffensively of the wastes that the existing buildings are already producing. That court order was issued and became effective on the 8th of August of last year, and it is still binding. The disposition of wastes is still inadequate.

The court has publicly indicated its intention to keep this order in effect until the necessary steps are taken. In effect, those nine towns have been shut down because of the pollution condition they caused. That is a drastic remedy, and it will be employed only when the facts require it.

Since the Morris County case, there has also been employed in the City of Bridgeton, in the High Ridge Sewer Company case, and most recently against the

Town of Beach Haven, in a case in which the State brought 15 ocean county communities to court for their similar failure to observe the requirements of administrative orders.

I have included, just for general information for those of you who may have an interest, the identity of the 60 cases throughout New Jersey to which I have just referred that have been brought before the court since the September 1967 session of this conference.

In the area of specific interest here, court actions were initiated against the Town of West New York, the Town of Kearny and the Passaic Valley Sewerage Commissioners.

In the case of West New York, there was, in addition to the failure to observe the administrative order requirements, a substantial deterioration in the treatment processes of the plant, to the point where the court actually assumed trusteeship over the plant and appointed one of our engineers as his representative to operate the plant and make the necessary improvements. This is also a first.

The case of the Passaic Valley Sewerage Commissioners is the most notable of the three, partly because of the complexities of the issues, including jurisdiction, and the fact that this treatment plant is the largest in New Jersey, processing almost one-fourth of the one billion gallons a day receiving treatment in our State.

In recapitulation here, it is our intention to seek court action in all cases where the recipients of orders failed to take reasonable and timely action toward compliance. We will move as quickly as we can these cases throughout New Jersey, giving priority to those instances where no action whatever has been taken, and, hopefully, giving priority to those cases where the result of inaction has the most immediate impact on the public.

It now appears likely to us that a considerable number of additional court actions will be entered before the end of 1969.

I made reference in my printed statement that an analysis of the proceedings in the Passaic Valley Sewerage Commissioners case would be presented by Deputy Attorney General Theodore Schwartz who served as our counsel in that case. Unfortunately, Mr. Schwartz was not able to come until this afternoon, and, fortunately, we won't all have to be here this afternoon, so that statement will simply be provided for the record, with the permission of the Chairman.

MR. STEIN: That will be done. Isn't Mr. Schwartz going to the picnic either?

(The above-mentioned material, marked Exhibit #2, is on file at Hq. FWPCA, Washington, D. C., the Regional Office, Boston, Massachusetts, and the Hudson-Delaware Basin Office, Edison, New Jersey.)

MR. SULLIVAN: In the separation of activities that we have, Mr. Schwartz works for the Attorney General and they have their own picnic (laughter).

MR. STEIN: New Jersey is going to rival the Federal Government in its complexity. We do the same thing.

MR. SULLIVAN: In the area of interest to this conference, in the geographical area and in a number of other places in New Jersey, it is not now physically possible to construct the needed and required treatment facilities in timely compliance with the orders we have issued. We have no intention, however, of altering these schedules in any way. It seems to me very silly for a State agency or any other agency of government to issue an enforceable order which allows, say, four years for compliance, and then after three years of inaction revise the schedules because all of the necessary work cannot be done in the remaining twelve months.

This comes under the heading of backsliding. I don't think the public interest is protected by it.

It is not our intention to relieve any of the order recipients of the obligation imposed upon them by the orders originally issued and now in effect. Those orders were necessary and proper at the time of their issuance. If there was a challenge to be made for them or a contention that they were unlawful or unnecessary, the time to make that contention was within the period prescribed in the statute--a time which has elapsed for virtually all of the orders in question.

Failure to conform with these order schedules is the product of both inertia and high cost. In my own opinion, the high cost certainly contributes to the inertia.

Our statutes do not say that it is okay to pollute if you are poor. In the administration, again, of this remedial statute that directs us to correct pollution, we take the requirements of the statute at face value and attempt to enforce them as best we can with limited resources. The assertion that it is not okay to pollute if you are poor was affirmed in somewhat more elegant language in the opinion of the court in the Passaic Valley Sewerage Commissioners case.

Nonetheless, it is absurd, in my opinion, for responsible government agencies operating in this field not to consider and make appropriate recommendations concerning the capital funding of the very expensive trunk lines and regional treatment facilities which are required if our water quality standards are to be met.

In the last 20 years in New Jersey we have spent about $650 million for the construction of collection and treatment facilities. As a result, no community in New Jersey collects wastes and does not provide treatment. The treatment is painfully inadequate in some cases. There has been a proliferation of small inefficient plants, but we do not have sewered communities in New Jersey putting their untreated wastes into the nearest stream, and yet we have a patent inability to conform to the water quality standards.

Of the $650 million that has been spent in this effort providing sewerage facilities for more than 90 per cent of our population, three per cent of it was Federal aid, one per cent State aid, and the other 96 per cent came out of the hide of the property taxpayer either in the form of property taxes or in the form of user assessments.

Our current estimate of the costs of the regional treatment facilities now needed in New Jersey to serve our public to avoid the pollution of our waters, hopefully to meet water quality standards, and to conform with the treatment regulations and the administrative orders that I referred to earlier, is $986 million. That estimate is in 1968 dollars, and it is already obsolete because of the escalation of construction costs, but to somehow circumscribe the issue we felt it necessary to pin down at least the estimate with that degree of precision.

This is the estimated cost of facilities which are eligible for State and Federal aid. Additional collection systems which will be built to accompany some of these new regional facilities to provide sewerage for communities that now have individual disposal systems. The cost of these collection systems that will be built along with the $986 million is estimated to be $225 million.

To put into place the facilities whose need we can now identify without rebuttal, in my own judgment, is about $1.2 billion.

While I have worked with the Government for a long time, I am still impressed with a number of that size.

In New Jersey, and I suppose it is true elsewhere as well, we cannot expect local governments to continue to assume these enormous costs without non-local assistance. In order to deal with this problem, New Jersey's Governor Hughes earlier this year recommended that the Legislature adopt a clean water bond issue to provide State grants to local governments of 25 per cent of the costs.

A copy of our report, which served as the basis for this recommendation, is attached to my testimony, and, with the permission of the Chair, will be made a part of the record.

MR. STEIN: Without objection, that will be done.

MR. SULLIVAN: Included in this report, and copies are available to any of you who would like to examine the costs and the basis for their arrival, we have listed all of the projects whose need we can now identify with an estimate of the cost of each and the basis upon which that estimate was drawn.

We have also, in a brief narrative, attempted to set forth the reasons why we thought State capital funding in this amount was a necessity.

Those of you who will peruse the report will find that our recommendation was that the State pick up 50 per cent of the cost, half of that amount being its 25 per cent share and the other half being a prefinancing of hoped for Federal funds, but when the number got over $400 million, it frightened some of our elected officials, understandably following upon the heels of a million-dollar bond issue for other purposes last fall, and it was felt that the 25 per cent was a more rational figure.

On the 15th of May, 1969, the Legislature overwhelmingly voted to put this bond issue on the ballot in the coming November. The amount of the issue is $271 million, of which $242 million is allocated to State grants for sewerage facilities and the other $29 million set up for the acquisition of reservoir sites for water supply purposes.

We have attempted to convince all of those who would listen, and we have attempted to convince quite a few people over the last few months, you can be assured, that we have three choices here: either we are in favor of water pollution, an unpalatable thought; or we are in favor of the property taxpayer picking up the whole tab for the required corrective measures; or we are in favor of a bond issue.

The Legislature apparently came to the conclusion that these were the three choices, and responsibly acted in favor of the third.

We have further explained that it would do two things: First, it would guarantee the local government that at least 25 per cent of the cost of this project will be in the State Treasurer's office ready for his use when construction commences; and, under the provisions of the Federal statute, by receiving this 25 per cent, he will be eligible for the maximum amount of Federal aid that does become available hereafter.

We claim, as a result, there isn't anything to be gained by waiting. If we wait around for hoped for additional Federal funds that may never come, we will suffer the absence of these needed facilities in the meantime, and the costs will rise rapidly because of the escalation of costs in the construction industry. If the needed facilities are constructed now and Federal aid becomes available later, if the reimbursability provisions of Federal aid are kept intact, local government will be reimbursed and responsible local officials can then move to construct and to impose expenses upon their constituents with the knowledge that they have taken all the possible steps to assure to their citizens the alleviation of non-local assistance.

In my own opinion, the electorate in New Jersey is ready to make this kind of an investment, and we hope and expect that they will reflect their readiness in an affirmative vote in November.

Interestingly to us, one factor that threatened seriously the adoption of this bond issue in the New Jersey Legislature was the contention made by some in that body that the Federal Government is unable or unwilling to provide its share of the matching funds, and why, therefore, should New Jersey commit itself to this effort when the Federal Government will not keep its share of the bargain?

We attempted to point out in our responses to legislators that we really do not have a choice. The facilities have to be built. They are a matter of public necessity. The question is: how best can we finance them?

In our judgment, a minimum of 25 per cent State aid and whatever we can get from the Congress is the way we should go, but the choice of waiting is not really available to us.

It has, nevertheless, been a curiosity to me that when the Federal statute was adopted, it permitted a maximum of 55 per cent Federal aid for those eligible projects which received 25 per cent State aid and met other conditions of eligibility.

The full four-year authorization in this legislation, if it were all appropriated, would give the State of New Jersey not 55 per cent but about 11 per cent of its capital needs. The separation between the 11 per cent and the 55 per cent is so unrealistic that it has raised expectations that cannot be met. This circumstance, of course, has been made even more difficult because of the fact that at the current rate of appropriations, if continued for the rest of the four-year period, will provide Federal aid not in the amount of 11 per cent but of less than three per cent.

In my own opinion, the net effect today of the Federal aid program for water pollution control has been to slow down progress rather than hasten it. In other words, as I have attempted to make clear in my earlier comments, we will continue through court actions, if necessary, to enforce all of the requirements of this ambitious corrective program. Unless, however, the Federal Government will provide more than its current level of miserly--in the text I said "niggardly" but that word was already used by Mr. Metzler--miserly financial support there will not be acceptable progress.

I listened carefully to the comments that the Chairman made earlier that an authorization is not a promise, which is technically correct. I think, nevertheless, having these percentage numbers in the statute and recognizing the high costs of correction, that it is necessary, at least, to meet the authorization in the statute in the form of appropriations.

But, in any case--this is a point I would like to make entirely clear, and it is made without rancor and it is simply an expression of opinion--it is unconscionable, in my judgment, for the responsible Federal officials to shout urgency in New York and whisper low priority in Washington. If it is the collective judgment of our highest elected public officials that water pollution control is in fact a low priority item in contrast with other problems, so be it. They are elected to make those decisions. If they make that decision, let's accept it and sit back until our wastes are over our shoetops.

If, as we believe, pollution control is a high priority item, then all of the responsible public officials, to avoid hypocrisy, must make the painful decision to appropriate the funds despite the competition of other pressing needs. You can't have it both ways.

The responsible elected officials in New Jersey this year have made precisely that painful decision--in a year, I might add, when a new Governor will be elected and when half of our Legislature will be elected. They have made a bipartisan agreement to put a clean water bond issue before the voters. We hope that our Federal friends will be similarly responsible when they are shortly called upon to make a similar decision.

This concludes the basis of my own statement. I will be glad at this time to respond to questions by the panelists or to proceed with other witnesses, at the pleasure of the Chairman.

(The following documents were submitted by Mr. Sullivan for inclusion in the record:)

WATER POLLUTION COURT ACTIONS INITIATED BY NEW JERSEY DEPARTMENT OF HEALTH

Potato Products, Inc.

Boro of Bay Head

Ship Bottom Sewerage Authority

Boro of Seaside Park

Boro of Surf City

Boro of Point Pleasant Beach

Beach Haven Sewerage Authority

Boro of Seaside Heights

Berkeley Township Sewerage Authority

Long Beach Township Municipal Utilities Authority

Tuckerton Municipal Utilities Authority

Brick Township

Jackson Township Municipal Utilities Authority

Boro of Lakehurst

Dover Township Sewerage Authority

Stafford Township Municipal Utilities Authority

Boro of Island Heights

Cedar Grove

Kearny

Keyport

Matawan

Keansburg

Town of West New York

Gamma Chemical Corporation

Tenneco Chemicals, Inc.

Boro of Washington

Sanco Piece Dye Works & Town of Phillipsburg

Republic Wire Corporation

Columbian Carbon Co.

Boro of Longport

Philip Carey Manufacturing Co.

Berkeley Township Sewerage Authority

Allegheny Industrial Chemical Co.

Hatco Chemical Division, W. R. Grace Co.

National Fruit Products Co.

U. S. Bronze Powders, Inc.

Bridgeton

Anthony Pio Costa

Boro of Pennington

Central Railroad of New Jersey

Passaic Valley Sewerage Commissioners

City of Jersey City, Parsippany-Troy Hills

Paul's Diner

D. A. Stuart Oil Co.

City of Jersey City, Town of Boonton, et al

High Ridge Sewer Co.

S. B. Penick & Co., Inc.

Drew Chemical Corp.

Johanna Farms, Inc.

NEW JERSEY STATE DEPARTMENT OF HEALTH

HUDSON RIVER BASIN

SCHEDULES OF CURRENT ADMINISTRATIVE ORDERS

	(1) Place in operation effective postchlorination	Report on Design	Preliminary Plan	Final Plans	Award Construction Contracts	Complete Construction	Remarks
Bayonne City	5/15/67	10/1/67	4/1/68	3/1/69	6/1/69	10/30/70	
Verona-Pharma Chemical Corporation Bayonne	Not applicable	4/15/69					
Edgewater Borough	5/15/67	10/1/67	4/1/68	3/1/69	6/1/69	10/30/70	
Lever Brothers Company Edgewater	Not applicable	11/1/69					
Hoboken City	5/15/67	10/1/67	4/1/68	3/1/69	6/1/69	10/30/70	
Jersey City Sewerage Authority (two plants)	5/15/67	10/1/67	4/1/68	3/1/69	6/1/69	10/30/70	
North Bergen Township (Woodcliff Section)	(2)	2/1/68	7/1/68	5/1/69	8/1/69	10/30/70	
Passaic Valley Sewerage Commissioners	5/15/67	10/1/67	4/1/68	3/1/69	6/1/69	10/30/70	
West New York Town	5/15/67	10/1/67	4/1/68	3/1/69	6/1/69	10/30/70	
Kearny	5/15/67	4/30/68	10/30/68	6/1/69	9/1/69	10/30/70	

(1) All facilities with the exception of Passaic Valley Sewerage Commissioners are postchlorinating.

(2) Postchlorination was initiated in accordance with a Departmental Directive dated April 27, 1965.

ANTICIPATED CAPITAL NEEDS
FOR SEWERAGE FACILITIES
IN NEW JERSEY

NEW JERSEY STATE DEPARTMENT OF HEALTH
DIVISION OF CLEAN AIR AND WATER

Roscoe P. Kandle, M.D.
State Commissioner of Health

Richard J. Sullivan, Director
Division of Clean Air and Water

February 3, 1969

A. INTRODUCTORY STATEMENT

Water Pollution

To say that New Jersey has a serious water pollution problem is to state the obvious. We state it nevertheless.

It is not a problem caused by a small number of indifferent polluters. It is the result of the growth of our communities having greatly outdistanced our pollution control efforts. Seven hundred fifty treatment plants put more than one billion gallons per day of inadequately treated sanitary and industrial wastes into our waterways. This is the essence of the problem. It is augmented by agricultural run-off, animal wastes, the use of insecticides, storm water run-off and transitory dumping, or pollution episodes.

As a consequence many of our bayshore beaches and the bays themselves have been lost to recreational uses, including inland waters bordering communities along the southern shore whose whole economy is water-oriented.

A number of our rivers, including the Passaic and the Raritan, are the receiving waters for inadequately treated wastes but must serve as well as the sources of public drinking water supplies.

Several of our largest lakes, whose entire development has been based upon the use of the water for recreational purposes, are now threatened with pollution.

Seventy-nine thousand nine hundred fifteen acres of bay waters in the Raritan Basin and along our southern coast have been closed to the harvesting of shellfish because the water has become so highly contaminated.

The use of private septic systems in some areas of our State where sewers are not available not only causes pollution of the ground and of nearby streams but contaminates wells which would otherwise be usable for drinking water supplies.

The continued disposition of partially treated wastes just off shore on our north Atlantic coast, if permitted to go uncorrected, may threaten the use of the surf waters themselves.

Industry which considers locating in New Jersey is surely influenced by the quality of our environment. For a so-called "wet" industry the quality of water available for use is often a crucial factor in deciding upon a new location.

In several places in our State in cases referred to below the courts have ordered that growth stop until adequate waste disposal facilities can be made available.

All of our major and most of our minor waterways now fail to meet the water quality standards established for them.

Remedies

In any discussion of water pollution control in New Jersey the three key words are enforcement, regionalization and costs--in reverse order of importance.

Enforcement

The Division of Clean Air and Water of the State Department of Health is the agency in the State which has primary enforcement responsibility for water pollution control. We are committed to an unremitting enforcement program. The years of 1967 and 1968 have seen more enforcement activity than in any period in memory.

Water quality standards were defined with the aid and advice of the Division of Fish and Game and promulgated as our definitions of water quality objectives. After public hearing, all of the streams, rivers, bays, estuaries, and coastal waters of the State have been classified as to the water quality to be achieved. This means that the degree of water purity has been established for each waterway as an enforceable objective.

To cause these objectives to be met the State further promulgated regulations establishing the required degree of treatment of all waste entering any of these waterways. To achieve compliance with these regulations the Division has issued 236 administrative orders. These orders incorporate timetables for compliance. The recipients, which for the most part include municipalities, authorities and industries, are subject to the sanctions provided by statute if they fail to perform the necessary work in accordance with the schedule set forth.

In a series of recent court cases the State has demonstrated its willingness to litigate where its requirements are violated. In addition to Superior Court injunctions directing compliance with our orders the Division last year sought and obtained an unprecedented remedy. The State requested the court to order nine communities in Morris County to cease the issuance of building permits until adequate provisions can be made for the disposal of liquid waste. The same remedy was applied in the High Ridge Sewer Company case, in Washington Township in Gloucester County, and in the City of Bridgeton.

The Water Policy and Supply Council has augmented our enforcement policy by refusing to issue permits for water diversion unless the applicant can show that the ultimate disposition of the wastes generated will be in accordance with Health Department requirements.

Because the compliance schedules contained in extant administrative orders are not being met in many cases, in 1969 we expect to initiate a greater number of court actions.

While rigorous enforcement is surely necessary to the effective administration of the statutes, to press those who are reluctant to move, and to deal with individual pollution problems it is not an adequate response to the problem. However unrelenting the enforcement it cannot by itself cause the State's needs to be met.

Regionalization

For many years in New Jersey the tradition was upheld that no community is complete without its own sewage treatment plant. Because sewage disposal was provided as needed as any other municipal service, treatment plants in New Jersey proliferated. There are now about 750 sewage treatment plants in this State. The proliferation is graphically shown by the map of our State presented as Plate No. 1.

By statute treatment plants cannot be constructed unless permits for them are approved by the State Department of Health. Until 1966 however the Department had no statutory authority to disapprove a treatment plant becuase it was non-regional. In 1966 the Legislature established as public policy the need to require the construction of sewage disposal facilities on the basis of drainage basins rather than municipal boundaries. Even in the absence of that statute several large regional facilities had already been constructed, such as the facility of the Passaic Valley Sewerage Commissioners, the Bergen County Sewer Authority, and the Middlesex County Sewerage Authority. In those cases logic prevailed over custom, in the absence of statutory requirements for regionalization. For most of the State, however, this has not been the case.

All of the administrative orders issued to local government require that the construction of new facilities be in accordance with developed plans for regionalization. The Department's power to prohibit non-regional facilities was upheld in 1968 in a court challenge by a municipality.

In order to develop the engineering plans for regional treatment facilities the Legislature in 1966 authorized the State Health Department to make grants to cover the cost of engineering feasibility studies. At a cost of $1.766 million the Department has funded such feasibility studies for almost all of the State's drainage basins. These studies are referred to in Table 4. There is still considerable reluctance in some parts of the State to accept regionalization. The advantages, however, are quite apparent:

(a) As a rule, the larger the treatment facility the less the cost of construction and operation per capita;

(b) More efficient and capable plant operation is attainable in large facilities. Such plants are able to hire qualified supervisory and operating personnel as well as to provide adequate laboratory controls. Many small plants are now operating without these necessities;

(c) In order to meet the needs of growing New Jersey greater water re-use will be employed. This will require highly sophisticated treatment which cannot be accomplished with anything less than the most capable maintenance and operation;

(d) Many of the existing treatment plants are focal points of local blight. Many of these were conditionally approved when they were built as interim facilities which must be abandoned when a regional system is within reach;

(e) There is much more flexibility and stability in the operation of a large plant. This makes the plant able to absorb sudden changes in the characteristics of the wastes being treated. This capability is most necessary in the handling of wastes derived from a wide variety of industrial processes.

The map on Plate 2 shows the location of proposed regional treatment facilities in accordance with the plans developed by feasibility studies. A glance also at Plate 1 will show the extent to which the proposed regionalization will reduce the number of small plants now operating.

Costs

The Federal Water Pollution Control Act (P.L. 84-660) authorizes the Secretary of the Interior to make grants to any authorized agency to assist in the construction of interceptor sewers, wastewater treatment plants and outfall sewers. The Clean Water Restoration Act of 1966 (P.L. 89-753) amended the basic act by increasing the amount of Federal Grants if the states participate in the grant program.

The New Jersey State Legislature enacted the "State Public Sanitary Sewerage Facilitites Assistance Act of 1965" which authorized State participation under the Clean Water Restoration Act of 1966 and appropriated State funds to assist in the construction of wastewater treatment disposal facilities. This legislation authorized the State Department of Health to award grants not to exceed 30 per cent of the construction cost of water pollution control projects which qualify for Federal aid assistance under the "Federal Water Pollution Control Act".

The State Legislature appropriated a total of $5,798,200 for Fiscal Years 1968 and 1969 for State Construction Grants. These funds were apportioned in accordance with priorities established by the Department of Health to projects eligible for Federal aid. Ten projects were funded at a rate of 9.2 per cent of the eligible construction cost from Fiscal Year 1968 funds and it is anticipated that ten projects will be funded at a rate of approximately 11 per cent from Fiscal Year 1969 funds. (See Tables 1 and 2)

Under the terms of the Federal statute local government is eligible for 30 per cent of the cost of construction of sewage treatment plants and trunk lines. This eligibility can be increased to 55 per cent if the State provides the legal authority and the money to fund 25 per cent of the cost of all such projects.

The State does have such legal authority in the 1965 Act listed above. In fact, however, neither the State nor the Federal Government has appropriated funds in amounts representing more than a tiny fragment of the needs.

The four-year authorization contained in the Federal funding statute would, in accordance with statutory formula, provide New Jersey a total of about $109 million in aid or 12 per cent of the costs described below. However, if the funds appropriated continue for the next two years at the level of the last two years Federal aid will amount to less than three per cent of the total needs described below.

To date Federal and State aid funds that have actually been appropriated have been in such small amount as to have no measurable impact on the pollution control program.

In last year's statement of capital needs and again in this discussion the Department has made as careful an assessment as the facts would allow of the capital costs of constructing regional sewage treatment plants and trunk lines needed to serve the public, to correct pollution of our waterways, and to conform with the treatment regulations and administrative orders described above. Last year's estimates were presented in testimony before the Governor's Commission to Evaluate the Capital Needs of New Jersey. These estimates have now been updated.

The total estimated costs of all facilities now needed is $906,000,000. The cutoff date in this estimate is 1 July 1967. Any project for which construction was begun prior to that date is not included. This total therefore includes approximately $53 million of eligible facilities which were partially funded by State grants in fiscal 1968 and 1969, almost all of which are now under construction. These projects are presented on Tables 1 and 2. It also includes an additional $50 million of projects for which engineering plans are completed and approved by the Department and which have already been certified as eligible for Federal and State aid.

The main list of needed facilities with a total cost of $803 million is presented as Table 4. These projects have not advanced to construction plans; most have not even begun the engineering work which must precede construction.

The $906 million total is the estimated cost of treatment plants, trunk lines and outfalls now needed in New Jersey and which are eligible under law for Federal and State construction grants. The total does not include the cost of upgrading the treatment plant and conveyance systems of the Passaic Valley Sewerage Commissioners. No information of any kind is available to us as to the cost of that project. The Commissioners contend that separate legislation must be enacted to give them authority to raise construction funds. It should be noted, however, that the treatment plant in question is the largest in the State; it is under administrative order to meet existing requirements, and has been taken to court by the Department for its failure to do so. That case is still pending. It is our guess that the cost of bringing these facilities into conformity with State law and Department requirements is in excess of $100 million.

The total estimate in our 1968 statement of anticipated needs was $762 million. Several comments should be made as to the reason for the increase of this number to the present estimate of $906 million:

(1) It is a year later and the list of needs is commensurately longer. The starting point in time is the same for last year's estimate, i.e. 1 July 1967. This date

was selected because any project for which construction commences after that date which receives 25 per cent State aid is eligible for the maximum 55 per cent Federal aid. Projects starting construction before that date are eligible for a maximum of 33 per cent Federal aid no matter whether the State participates or not;

(2) Projects have been added, such as sludge digesters for Middlesex County, and the bayshore outfall for Monmouth County which were not contemplated a year ago;

(3) The estimates in this report are a refinement of those presented last year. The refinement has been made possible by the completion of feasibility studies in the interim. The basis upon which all estimates are made in this report is set forth in Section C;

(4) Construction costs have risen at a remarkable rate so as to make some of last year's estimates obsolete. If the rise continues this year's estimate will prove conservative in the light of next year's construction costs. All estimates presented are in 1968 dollars.

As noted above the $906 million is the assessment of the cost of eligible facilities. It will be necessary to accompany the construction of these eligible facilities with the construction of an estimated $225 million of sewage collection systems which are not eligible for Federal and State aid (there is some eligibility for limited Federal aid for such collection systems from the Federal Department of Housing and Urban Development and other Federal agencies. There is no eligibility for aid from the principal funding agency: The Federal Water Pollution Control Administration, Department of the Interior.)

In our judgment it is wholly unrealistic to expect local government with the little Federal aid now available to bear the enormous cost of constructing sewage facilities now needed.

To do so would place an unconscionable additional burden upon the property owner in the form of additional property taxes or use charges. Furthermore, in the concept of regionalization discussed above an area-wide problem is solved on an area basis. In many cases this means the construction of expensive trunk lines with sufficient capacity to serve upstream users when the need arises. It is unreasonable to expect those who now will use the system to pay all by themselves for a waste disposal facility that will accommodate growth and development that has not yet arrived. The question, it seems to us, revolves around the proper distribution of the costs among local, State and Federal Government.

While the Federal aid appropriations have been very small to date interest in water pollution control is high in the Congress and we have good reason to believe that the Federal aid program will be extended beyond the current law's expiration date, 30 June 1971.

If the State funds all projects at a level not less than 25 per cent it will assure its local government of maximum eligibility for Federal funding now and in the future.

Furthermore, soon to be introduced in the Congress is a revised version of last year's S3206 which passed both Houses with some differences that could not be resolved in the short time remaining at the end of the session. This bill would augment Federal grants with mortgage contracts between the Federal Government and local entities which construct eligible sewerage facilities. The form of the contract would be a guarantee that the Federal Government would pay a share of the amortization cost over a period not to exceed thirty years. This contract arrangement is designed to make up the difference between cash appropriations and the Federal law's authorization in the alternative form of long-term payments of principal and interest.

It is our understanding through discussion with Federal officials that this year's bill will call for the disposition of all such mortgage funds to the States in accordance with the following formula: 50 per cent of all the money to States on the basis of population; the other 50 per cent would be distributed only to those States that have the legal authority and the money to fund at least 25 per cent of the costs of all eligible sewerage construction. New Jersey has the law but it does not have the money. If such a bill is enacted considerable sums of money will be lost to New Jersey if it does not provide funds of its own to underwrite at least 25 per cent of eligible construction costs.

Under present New Jersey law the Department is authorized to lend to those responsible for the construction of sewerage faciliites money to pay the costs of the engineering work which must precede construction. As a rule of thumb the cost of this engineering work is about five to six per cent of the total cost of the project. The money is lent for three years without interest. If the loan extends beyond three years interest is charged at the rate of two per cent per annum for the entire period of the loan. To date we have lent approximately $5.3 million.

If the State moves ahead with a construction program of the proportion needed, additional engineering loan appropriations must be made. Considering the likely timetable of construction, the amount of money involved and the likely rate of payback into the revolving fund it is our estimate that a $20 million fund should suffice. The estimate is very difficult to make because of uncertainty as to how many of those responsible for the projects will actually make application for such loans. The $20 million figure is therefore an imprecise estimate.

It is not known what the source of these funds can be, whether through direct appropriation from the general treasury or by some other means. If the State were to provide capital funds for construction grants the possibility could be considered of using the established capital fund as a source of either loans or advance grants for engineering costs. An impediment to the advanced grant concept is that it would require the initiation of a grant before the project has moved well enough along to qualify for a grant under present requirements.

Varying capital funding alternatives are available for consideration involving varying degrees of participation by the three levels of government. The alternatives as we see them are presented in Table 5, discussed in Table 6, and the costs to the State of each are summarized in Table 8.

Our recommendation concerning State funding is on the following page.

B. RECOMMENDATIONS

Almost as important as the amount of non-local aid for sewerage construction is the certainty of its availability. Elected and appointed local officials responsible for the construction of sewers and treatment plants are under great pressure to exhaust all possibilities of State and Federal aid before imposing burdensome taxes or charges upon their constituents. Such an official who moves too early or too late, or without diligence, may find himself unemployed next time around. The current Federal aid program since its inception has been filled with uncertainty. Unless we can somehow assure local government of a fixed amount of aid, and eligibility for additional aid should it become available later from the Federal Government, our ambitious program may continue to stand around with its hands in its pockets waiting for better days ahead.

Last year in our appearance before the Governor's Commission to Evaluate the Capital Needs of New Jersey, State Health Commissioner Roscoe P. Kandle and I recommended that the State finance 50 per cent of the cost of eligible and necessary sewage disposal facilities. Under our recommendation half of this 50 per cent would be the State's share of the construction cost, the other half would be money with which the State would pre-finance hoped-for Federal assistance. To the extent to which the Federal Government thereafter provided aid that money would reimburse the State's general treasury. In this manner local government would proceed to construct with the assurance that at least 50 per cent aid would be available from the State, or the State and Federal Government in combination.

This remains our recommendation. It is presented as alternative funding plan number 5 in Table 5. The cost to the State would be about $435 million less whatever Federal grants may be appropriated.

If the judgment is made that however logical and equitable the 50 per cent aid program may be, the amount of State funds required is simply too large to be supportable we would offer an alternative recommendation. The best alternative in our judgment is presented as number 4 in Table 5. This plan calls for 25 per cent State aid. This was the recommendation made to the Governor by his Capital Needs Commission last year and in turn made by the Governor to the Legislature. This is the least percentage of State aid which can be afforded local government and still assure it of maximum eligibility for Federal grants.

Under this proposal all eligible projects would get 25 per cent State aid; eligible projects would receive 30 per cent Federal aid as far as appropriations would permit. Local government would provide 45 per cent of the cost and receive from the Federal Government an unsigned I.O.U. for 25 per cent additional aid when and if Federal appropriations will allow.

Under this funding plan the cost to the State would be about $222 million. If even this amount is considered to be too high we would ask: Which of the projects on the attached list of needs should be scratched or deferred indefinitely? Which of these projects will we expect to proceed to construction without any State aid, and with reduced eligibility for Federal aid?

What would happen if, for example, the

Legislature decided to provide $100 million for State sewerage aid? In our opinion within eighteen months this total amount would fully be committed to projects with the greatest readiness to move ahead. It would not be spent in that period but it would be committed. There would be no aid funds for almost two-thirds of the facilities now needed. As a result those projects would not even move to do the engineering planning for construction with no prospect of aid. Eighteen months after a referendum the Legislature would be back again faced with the same question that it faces today.

In our judgment all of these needed facilities will be built sooner or later. If it is later they will cost appreciably more and we will suffer the effects of their absence in the meantime.

If we are willing to make this substantial commitment of our financial resources, New Jersey's waterways can be made clean. If we are not willing they will continue to become more polluted; and all the legislation, enforcement, planning, research, and hand-wringing lamentation on the desecration of our environment, won't make any difference.

S/Richard J. Sullivan, Director

Division of Clean Air and Water

C. VALIDITY OF COST ESTIMATES

The estimates provided in this statement were derived from one of the following sources:

(1) Comprehensive regional sewerage feasibility studies conducted by consulting engineering firms and financed by the State Department of Health;

(2) Engineering studies conducted by private or municipal engineers; and

(3) Engineering estimates by private or municipal engineers based upon final and detailed engineering plans. These estimates are based on 1968 dollars and no attempt was made to adjust the cost for normal inflation, or inflation of construction cost because of competition for services. When developing these estimates the Department did not consider such factors as the ability to pay or the time required to design and construct these facilities. The list represents the best estimates available of the current costs of all facilities now needed.

The Federal Water Pollution Control Administration's wastewater treatment plant construction cost index (Plate 3) for the New York area is made a part of this statement. It should be noted that the average construction cost index has risen sharply during the past year and particularly during the last six months. There is no way of predicting the exact effect this continuing rise will have on the estimates presented in this statement. We can say that the costs will in fact be much higher than these estimates based on our best engineering judgment at this point in time and that the longer construction is postponed the higher the cost will be.

D. BASIS OF COST ESTIMATES

ATLANTIC COUNTY

The cost estimates for Atlantic County were established by a regional sewerage feasibility study financed by the State Department of Health. The study report was completed in April 1968 and was accepted by the Department for payment on October 9, 1968. The cost figures presented in the March 1, 1968, statement on "Anticipated Capital Needs" were based on preliminary estimates before the sewerage feasibility study was completed. Much of the construction of sewerage facilities is necessary to comply with orders issued by the Department.

BERGEN COUNTY

The cost estimates for Bergen County were established by engineering studies completed by consulting engineers for the Bergen County Sewer Authority, Northwest Bergen County Sewer Authority and the Borough of Edgewater.

A portion of the construction estimate presented in the 1968 "Anticipated Capital Needs" statement for the Bergen County Sewer Authority appears in Tables 1 and 2. The remainder of the estimate has been revised in accordance with completed engineering studies.

Additional costs for the Northwest Bergen County Sewer Authority appears on Table 1.

The Borough of Edgewater has been ordered by the Department to upgrade the wastewater treatment process to meet the State water quality standards. The estimate for the Borough of Edgewater is identified as an individual project because at this time a more accurate determination can be made of the cost of needed facilities. In the 1968 statement this project was included in the estimate for unlisted projects.

BURLINGTON COUNTY

The Burlington County estimate of the cost of providing needed sewerage facilities was developed as part of a regional sewerage feasibility study financed by the Department which is presently in the final stage of completion.

No estimate was identified for Burlington County in the 1968 statement because it was impossible at that time to evaluate the needs and arrive at even a preliminary estimate because of the lack of necessary information. The anticipated needs for Burlington County were included in the broad estimate for unlisted projects.

CAMDEN COUNTY

The cost estimates for Camden County were established by a regional feasibility study financed by the Department and reflects the cost of the sewerage facilities to serve the immediate needs of the county as outlined in the study report. A large proportion of the required construction is necessary to comply with orders issued by the Department. Date of Report: December 1967.

CAPE MAY COUNTY

A regional sewerage feasibility study financed by the Department for Cape May County is presently nearing completion. Enough information is available at this time to establish a firm estimate of the cost of needed sewerage facilities. This information was not available when the 1968 statement was prepared. The comprehensive study revealed a much greater need for sewerage facilities in Cape May County than was previously estimated due to the need to protect public health, the extensive recreational and shellfish harvesting areas and the need to comply with Departmental Orders.

ESSEX COUNTY

Almost all of the construction of sewerage facilities needed in Essex County will fall under the jurisdiction of the Passaic Valley Sewerage Commissioners which will be covered separately in this statement. However some construction is required in the Township of Cedar Grove and the Borough of Fairfield. These estimates are identified separately whereas they were lumped in the estimate for unlisted projects in last year's statement.

GLOUCESTER COUNTY

The cost estimates presented for Gloucester County are based upon a regional sewerage feasibility study financed by the Department and reflect the cost of those facilities which the Department believes are necessary at this time. Date of report: July 1967.

HUDSON COUNTY

The Hudson County estimates are broken down into several specific projects, some of which appeared in the 1968 statement. Since that time more definitive engineering estimates and studies have been made. The estimate for the City of Hoboken in last year's statement anticipated some construction which was later determined to be ineligible for Federal and State grant participation. Therefore this estimate has been revised downward to reflect this change.

Projects for North Bergen Township, West New York and the City of Bayonne have been more clearly defined and these projects are listed as individual items in this statement. These projects were included in the estimate of unlisted projects in the 1968 statement.

HUNTERDON COUNTY

Engineering studies have been completed by engineers for the Raritan Township Municipal Utilities Authority which established the cost of regional facilities to serve Raritan Township and the Borough of Flemington. A regional feasibility study is presently being financed by the Department for the remainder of Hunterdon

County. No costs are included here for the region under study.

MERCER COUNTY

The estimate for Mercer County comprises an updating of the East Windsor Municipal Utilities Authority estimate and the inclusion of the Ewing-Lawrence Sewerage Authority and Hamilton Township. These projects were included in last year's estimate for unlisted projects. However, studies have been completed to develop cost estimates since the preparation of the 1968 statement. Also included in the estimate for Mercer County is an expanded Stony Brook-Millstone River region which more than doubled the previous estimate for this region.

MIDDLESEX COUNTY

The cost estimate for the Middlesex County Sewerage Authority has been updated based on engineering estimates and includes sludge digestion facilities which will be required because of a recent decision of the Federal Government. The remainder of the estimate for Middlesex County is based upon recently completed engineering studies and estimates and are now listed as individual projects. The latter were included in the estimate for unlisted projects in the 1968 estimate.

MONMOUTH COUNTY

The cost estimates for the Northeast Monmouth County Regional Sewerage Authority and the Middletown Township Sewerage Authority are listed on Tables 2 and 3 and do not appear on the comprehensive list. The Ocean Township Sewerage Authority project is not listed this year since the project was started before July 1, 1967, and is not eligible for further Federal grant participation. The remainder of the Monmouth County estimate is based upon feasibility studies and engineering estimates that have been completed for the specific projects. The Bayshore Sewerage Authority project is now included in the listing.

MORRIS COUNTY

The Morris County comprehensive regional sewerage feasibility study financed by the Department was just completed in January 1969. This study provided the basis for establishing reliable cost estimates for needed sewerage facilities in Morris County.

The present estimate is significantly higher than that presented in the 1968 statement. The major portion of this increase has been caused by developments in the Rockaway valley involving the regional facilities operated by the City of Jersey City.

OCEAN COUNTY

The cost estimates for Ocean County are based upon a regional sewerage feasibility study financed by the Department and completed in December 1967. The report reflects the cost of those facilities which the Department feels are necessary at this time and to comply with Departmental Orders.

PASSAIC COUNTY

The southern portion of Passaic County is served by the Passaic Valley Sewerage Commissioners facilities. Cost estimates for needed construction for this area are not available. The "Comprehensive Report on Sewerage Facilities" for the Wanaque Valley Regional Sewerage Study Committee was completed in April 1968 and was not available when the cost estimate was developed for the 1968 statement. The estimate presented in this statement more realistically covers the needs of this area.

A regional sewerage feasibility study has recently been initiated to study the needs for the remaining portion (Mid-Passaic Basin) of Passaic County. This study is being financed by the Department and has progressed to the point where only a preliminary estimate has been developed.

SALEM COUNTY

The estimates for Salem County have been developed by engineering studies performed for Penns Grove, Pennsville, and Upper Penns Neck.

SOMERSET COUNTY

The estimates for Somerset County were derived from engineering estimates developed by consulting engineering firms retained by the municipalities shown on the list.

SUSSEX COUNTY

The estimate for Sussex County includes an updating of the estimate for the Wallkill Valley Region. Just after the submission of the 1968 statement, the Sussex County regional sewerage feasibility study was completed and was used as the basis for the estimates for the remainder of Sussex County. This study was sponsored and paid for by the Department of Health.

UNION COUNTY

The estimates for Union County were derived from engineering studies and engineering estimates by consulting engineering firms employed by the sewerage authorities. The estimate for the Rahway Valley Sewerage Authority appears on Table 3.

WARREN COUNTY

The cost estimates for Warren County were developed by a regional sewerage feasibility study financed by the Department and completed in March 1968.

PASSAIC VALLEY SEWERAGE COMMISSIONERS

At the time the 1968 statement was prepared it was impossible to develop an estimate with any validity for the cost of constructing needed facilities in the commissioners district.

In March 1967 the State Department of Health issued an order to the Passaic Valley Sewerage Commissioners which contained work performance schedules and included a requirement to complete studies and preliminary engineering by a specified date. The Passaic Valley Sewerage Commissioners failed to meet these schedules and were taken to court by the Department. In this action the Department's jurisdiction was contested. The court decision was favorable to the Department and the Commissioners filed an appeal in the Appellate Division of Superior Court. The case is pending.

It is still impossible to present a

reliable estimate for these construction needs. Our guess is that the cost will be in excess of $100 million.

E. EXPLANATION OF TABLES

TABLE 1

Table 1 is a listing of eligible projects that were certified for Federal grants and were not under construction by June 30, 1967. These projects became eligible to participate in the State Construction Grant program which was initiated for fiscal year 1968.

There was sufficient funds in the State Construction Grant account to award grants of only 9.2 per cent of the eligible construction cost instead of grants "not exceeding 30 per cent" allowable under the "State Public Sanitary Sewerage Facilities Assistance Act of 1965" as amended February 1967. It will require additional funds of $4,334,576 to raise these grants up to 25 per cent as was originally intended.

TABLE 2

Table 2 is a listing of eligible projects which have been certified for Federal grants and which can be funded during the present fiscal year. The eligible cost figures for these projects are not firm at this time since the Federal authorities have not completed the review of the listed projects. It is very likely that some of these figures will change. However, based on the stated figures there are sufficient State funds available to award State construction grants amounting to approximately 11 per cent of the eligible cost. Additional funds amounting to $3,557,637 will be required to raise these grants to 25 per cent of the eligible construction costs.

TABLE 3

Table 3 is a listing of all projects which have been certified for Federal grants under the reimbursable provisions of the Federal Water Pollution Control Act as amended by the Clean Water Restoration Act of 1966. Funds have not been obligated to any of these projects and the eligible cost figures are engineering estimates based upon final detailed engineering plans. It will require funds amounting to approximately $12,700,000 to provide State grants of 25 per cent of the eligible construction costs. It is very likely the eligible costs of these projects will increase when construction bids are received.

In summary the amount of money needed to provide 25 per cent grants to all the projects listed on Table 3 and to raise the grants of those projects listed on Tables 1 and 2 to 25 per cent will require approximately $20,555,000.

TABLE 4

This Table sets forth estimates of costs of eligible needed facilities not including those listed in Tables 1-3.

FINANCE ALTERNATIVES

TABLE 5

There are several alternatives for providing the funds needed for construction of needed waste treatment and disposal facilities:

(1) Financing 33 per cent by the Federal Government and 67 per cent by the local agency with non-participation by the State;

(2) If the State provides 30 per cent of the project funds, the Federal Government can provide 44 per cent leaving the local agency to raise 26 per cent of the project funds;

(3) If the State provides 25 per cent of the eligible construction cost, the Federal Government can contribute 55 per cent leaving the local agencies to raise 20 per cent;

(4) If the State provides 25 per cent

grants and prefinances an additional 25 per cent for Federal Government's share leaving 30 per cent to be financed by Federal grants and 20 per cent from the local agency; and

(5) If the State contributes 25 per cent construction grants and if all applicants agree to accept 30 per cent Federal grants (instead of the 55 per cent for which they would be eligible) then this will leave 45 per cent of the construction cost to be raised by the local agencies.

The allocation to each State of Federal construction grant funds is based on a fixed statutory formula and not based on the total needs of the State. (See Table 6) However, even if the Federal Government provides New Jersey with its full allocation of funds and with State participation it will be impossible to generate enough construction activity to meet New Jersey's needs for sewerage facilities. It is therefore necessary for the State to fund sewerage projects independently of Federal grants or prefinance a portion of the Federal Government share of construction grants with the possibility of being reimbursed by the Federal Government in future years.

FINANCIAL SUMMARY

It is obvious from Table 5 that without State participation it will be totally impossible for local agencies to raise the money necessary to provide the needed sewerage facilities even with Federal participation. Either of alternates 2 and 3 would be feasible providing the Federal Government appropriates sufficient funds. However this is doubtful when a review is made of Table 7. There is no way of predicting at this time just how much Federal grant money will be available in future years. If the present trend continues the Federal Government will appropriate only a small percentage of the authorized funds.

Alternates 3, 4 and 5 appear to be the only logical alternatives at this time. It may be possible to modify alternative 4 to fit the actual financial situations by prefinancing smaller Federal grants thus allowing greater coverage with the Federal money and requiring a larger contribution from the local agency. Under the provisions of the Federal Water Pollution Control Act as amended an applicant receiving a 25 per cent State construction grant is automatically eligible to receive a 55 per cent Federal construction grant providing the State has water quality standards approved by the Federal Government and the proposed facilities are of a regional nature. These two requirements are met in New Jersey.

Under alternative 5 it will be necessary for the local agency to express its acceptance of a 30 per cent Federal construction grant and accept eligibility for the additional 25 per cent which it may receive in the future if Federal appropriations are sufficient. This arrangement would permit spreading the limited Federal funds over a larger number of projects.

TABLE 6

This Table summarizes State funds needed for construction of sewerage facilities eligible for financial aid for alternative funding plans.

TABLE 7

This Table sets forth the New Jersey share of authorized and appropriated Federal funds.

TABLE 8

This Table summarizes all cost estimates.

* * *

TABLE 1

Sewerage Projects Receiving State Construction Grants from 1968 Fiscal Year Funds

	Eligible Construction Cost	Amount of State Grant+
Borough of Allentown	$ 339,100	$ 31,200
City of Plainfield	586,400	53,948
Township of Warren	482,200	44,362
Borough of Hillsdale	620,300	57,067
Town of Clinton	881,500	81,098
Middlesex County Sewerage Authority	5,458,400	502,172
Township of Hamilton	4,132,000	380,144
Borough of Fair Lawn	1,583,200	145,654
Borough of Caldwell	471,400	43,368
Northwest Bergen County Sewer Authority	12,660,000	1,130,036
TOTAL	$27,214,500	$2,469,049*

Total Eligible Cost = $27,214,500

25% of Eligible Cost = 6,803,625

*Amount of State Grants = 2,469,049

Additional State Money needed to raise grants to 25% = $ 4,334,576

+ Grants amount to 9.2% of the eligible construction cost.

* This figure does not include a grant of $427,758 to the Netcong-Musconetcong Sewerage Authority.

TABLE 2

Sewerage Projects Due to Receive State Construction Grants from Fiscal 1969 Funds

	Eligible Construction Cost	Am't. of State Grants*
Bergen County Sewer Authority	$ 3,039,000	$ 341,188
Montville Twp. Municipal Utilities Authority	1,327,000	148,982
Bridgewater Twp. Sewerage Authority	1,934,000	217,130
Township of Roxbury	1,391,000	156,167
Town of Phillipburg	47,500	5,333
Ewing-Lawrence Sewerage Authority	426,000	47,827
Madison-Chatham Joint Meeting	2,450,000	275,061
East Windsor Twp. Municipal Utilities Authority	249,000	27,955
Pompton Lakes Municipal Utilities Authority	475,000	53,328
Northeast Monmouth County Regional Sewerage Authority	14,492,000	1,627,017
TOTAL	$25,830,500	$2,899,988

Total Eligible Cost = $25,830,500

25% of Eligible Cost = 6,457,625

State Funds to be obligated = 2,899,988

Additional State funds needed to raise State grants to 25% = $3,557,637

*State grants amount to approximately 11% of the eligible construction cost estimates.

TABLE 3

Projects Certified for Federal Grants (reimbursable) For Which No Grant Funds Have Been Obligated

	Estimated Eligible Cost
Bergen County Sewer Authority	$ 1,950,000
Dover Township Sewerage Authority	14,433,000
Lower Township Municipal Utilities Authority	2,098,000
Bergen County Sewer Authority	1,300,000
City of Millville	2,750,000
Carlstadt Sewerage Authority	736,200
Middletown Township Sewerage Authority	11,113,000
Bergen County Sewer Authority	1,355,000
City of Summit	216,700
Borough of Fair Lawn	100,500
Rahway Valley Sewerage Authority	10,800,000
Hackettstown Municipal Utilities Authority	2,500,000
Borough of Fairfield	212,400
Borough of Allendale	283,100
TOTAL	$49,847,900

25% of Eligible Cost = $12,662,000

TABLE 4

Itemized Costs of Needed Eligible Facilities

ATLANTIC COUNTY		
Atlantic Coastal Region	$ 29,350,000	
Great Egg Harbor River Region	2,283,000	
Mullica River Region	947,000	
	$ 32,580,000	
		$32,580,000
BERGEN COUNTY		
Bergen County Sewer Authority Area	$ 39,200,000	
Northwest Bergen Co. Sewer Authority		
Mahwah-Ramsey Area	2,500,000	
Oakland Borough	4,000,000	
Edgewater Borough	2,200,000	
	$ 47,900,000	
		80,480,000
BURLINGTON COUNTY	30,000,000	
		$110,480,000
CAMDEN COUNTY		
Camden County Sewerage Authority		
Cooper River Region	7,400,000	
Big Timber Creek Region	15,800,000	
Pennsauken Creek Region	1,600,000	
Delaware River Region	28,300,000	
	53,100,000	
		$163,580,000
CAPE MAY COUNTY		
Lower Region	20,800,000	
Middle Region	11,460,000	
Dennis Creek Region	1,350,000	
Tuckahoe River Region	650,000	
Upper Region	9,140,000	
	43,400,000	
		$206,980,000

ESSEX COUNTY

Cedar Grove	$ 500,000	
Fairfield	380,000	
	$ 880,000	
		$207,860,000

GLOUCESTER COUNTY

Gloucester County Sewerage Authority		
Consolidated Region	20,000,000	
Maurice River Region	2,100,000	
Racoon Creek Region	200,000	
	22,300,000	
		$230,160,000

HUDSON COUNTY

City of Hoboken	10,500,000	
Jersey City Sewerage Authority	33,000,000	
Bayonne City	7,000,000	
North Bergen Township	7,500,000	
Town of Secaucus	5,700,000	
Town of West New York	5,500,000	
	69,200,000	
		$299,360,000

HUNTERDON COUNTY

Raritan Township Municipal Utilities Authority	1,000,000	
		$300,360,000

MERCER COUNTY

Ewing-Lawrence Sewerage Authority	10,000,000	
Hamilton Township	10,400,000	
Stony Brook-Millstone River Region	27,000,000	
East Windsor Township Municipal Utilities Authority	3,000,000	
	50,400,000	
		$350,760,000

MIDDLESEX COUNTY

Middlesex County Sewerage Authority	$125,000,000	
City of Perth Amboy	3,500,000	
City of South Amboy	2,000,000	
Woodbridge Township	6,500,000	
Madison Township Sewerage Authority	1,000,000	
Borough of Carteret	3,000,000	
Borough of Sayreville	2,500,000	
Edison Township	6,000,000	
	$149,500,000	
		$500,260,000

MONMOUTH COUNTY

Atlantic Highlands-Highlands Area	$ 2,100,000	
Bayshore Ocean Outfall	12,000,000	
Borough of Union Beach	3,500,000	
Hazlet Township Sewerage Authority	5,000,000	
Neptune Township Region	3,500,000	
Long Branch Sewerage Authority	3,000,000	
Wall Township		
Northern Region	4,100,000	
Southern Region	3,300,000	
Manasquan Region	7,500,000	
	44,000,000	
		$544,260,000

MORRIS COUNTY

Whippany Watershed	3,000,000	
Rockaway Watershed	30,000,000	
Pompton-Pequannock Watershed	9,000,000	
	42,000,000	
		$586,260,000

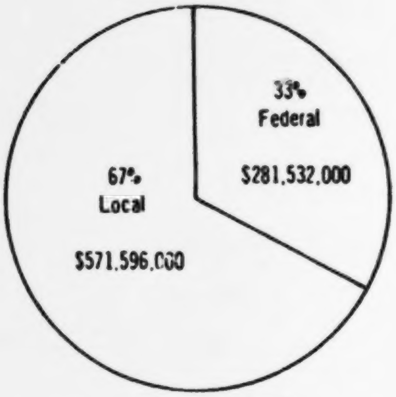
OCEAN COUNTY

Metedeconk Region (Inc. part of Monmouth County	25,200,000	
Toms River Region	26,140,000	
Forked River-Cedar Creek Region	13,970,000	
Mill Creek Region	15,340,000	
Southern Ocean County Region	11,850,000	
	92,500,000	
		$678,760,000

PASSAIC COUNTY		
Mid-Passaic Basin	$ 15,600,000	
Wanaque Valley Region	23,500,000	
	39,100,000	
		$717,860,000
SALEM COUNTY		
Pennsgrove, Upper Penns Neck Township	1,000,000	
Pennsville Township	700,000	
	1,700,000	
		$719,560,000
SOMERSET COUNTY		
Bridgewater Township Sewerage Authority	5,000,000	
Somerset-Raritan Valley Sewerage Authority	3,000,000	
Montgomery Township	300,000	
Manville Borough	300,000	
Warren Township	2,000,000	
	10,600,000	
		$730,160,000
SUSSEX COUNTY		
Wallkill Valley Region	12,500,000	
Musconetcong-Lake Hopatcong Region (incl. part of Morris County)	30,000,000	
	42,500,000	
		$772,660,000
UNION COUNTY		
Linden-Roselle Sewerage Authority	6,500,000	
Elizabeth Joint Meeting (incl. part of Essex County)	20,000,000	
	26,500,000	
		$799,160,000
WARREN COUNTY		
Belvidere Region	1,800,000	
Phillipsburg Complex	1,200,000	
Blairstown Area	1,120,000	
	$4,120,000	
GRAND TOTAL		$803,280,000

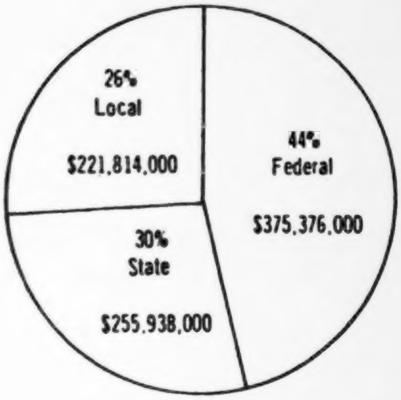
Table 5
ALTERNATIVE FUNDING PLANS
Total Cost - $853,128,000

Alternative #1

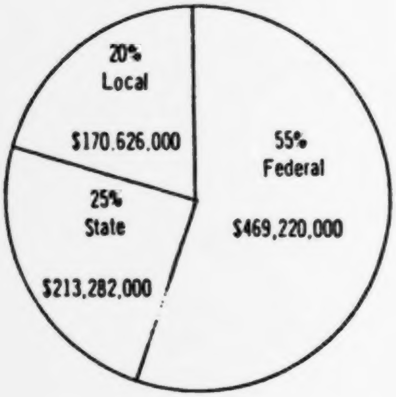


State not participating

Alternative #2



Alternative #3



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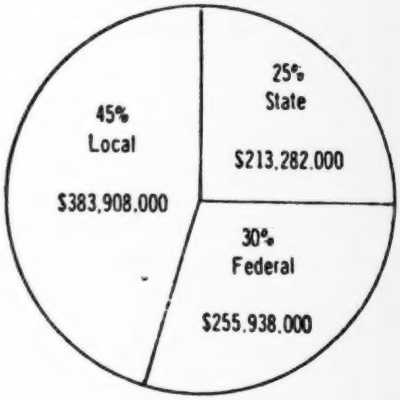

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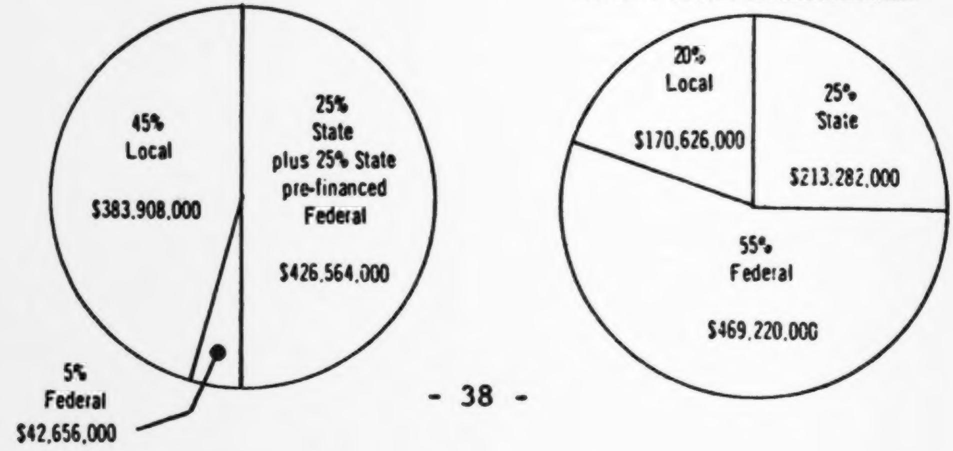


Present

After Federal Reimbursement

TABLE 6

Summary of State Funds Needed for Construction of Sewerage Facilities Eligible for Financial Aid for Alternative Funding Plans

Alternative 1	$0.0
Alternative 2	$255,938,000
Table 1	4,335,000
Table 2	3,558,000
TOTAL	$263,831,000
Alternative 3	$213,282,000
Table 1	4,335,000
Table 2	3,558,000
TOTAL	$221,175,000
Alternative 4	$213,282,000
Table 1	4,335,000
Table 2	3,558,000
TOTAL	$221,175,000
Alternative 5	$426,564,000
Table 1	4,335,000
Table 2	3,558,000
TOTAL	$434,457,000

TABLE 7

Federal Construction Grant Funds Authorized and Appropriated for New Jersey

Fiscal Year	Federal Funds Authorized for New Jersey	Federal Funds Appropriated for New Jersey
1967 - 1968	$14,040,400	$5,790,000
1968 - 1969	22,384,400	6,171,100
1969 - 1970	32,397,200	?
1970 - 1971	40,397,200	?

TABLE 8

Summary of Cost Estimates, Sewerage Construction in New Jersey

All estimates are based on 1968 construction dollars

1. The cost of trunk lines and treatment plants eligible to receive federal and state aid and now required to conform with the statutes, regulations and orders enforced by the State Department of Health.

Facilities already partially funded - Tables 1 and 2	$ 53,045,000
Certified facilities, not funded - Table 3	49,848,000
All other needed facilities - Table 4	803,280,000
TOTAL	$906,173,000

(Passaic Valley Sewerage Commissioners needs not included)

2. Local collection systems which will be built to accompany facilities described in Number 1 above and which are ineligible for state aid and for federal aid from Federal Water Pollution Control Administration. These systems may be eligible for limited aid from Department of Housing and Urban Development and other Federal agencies.

$225,000,000

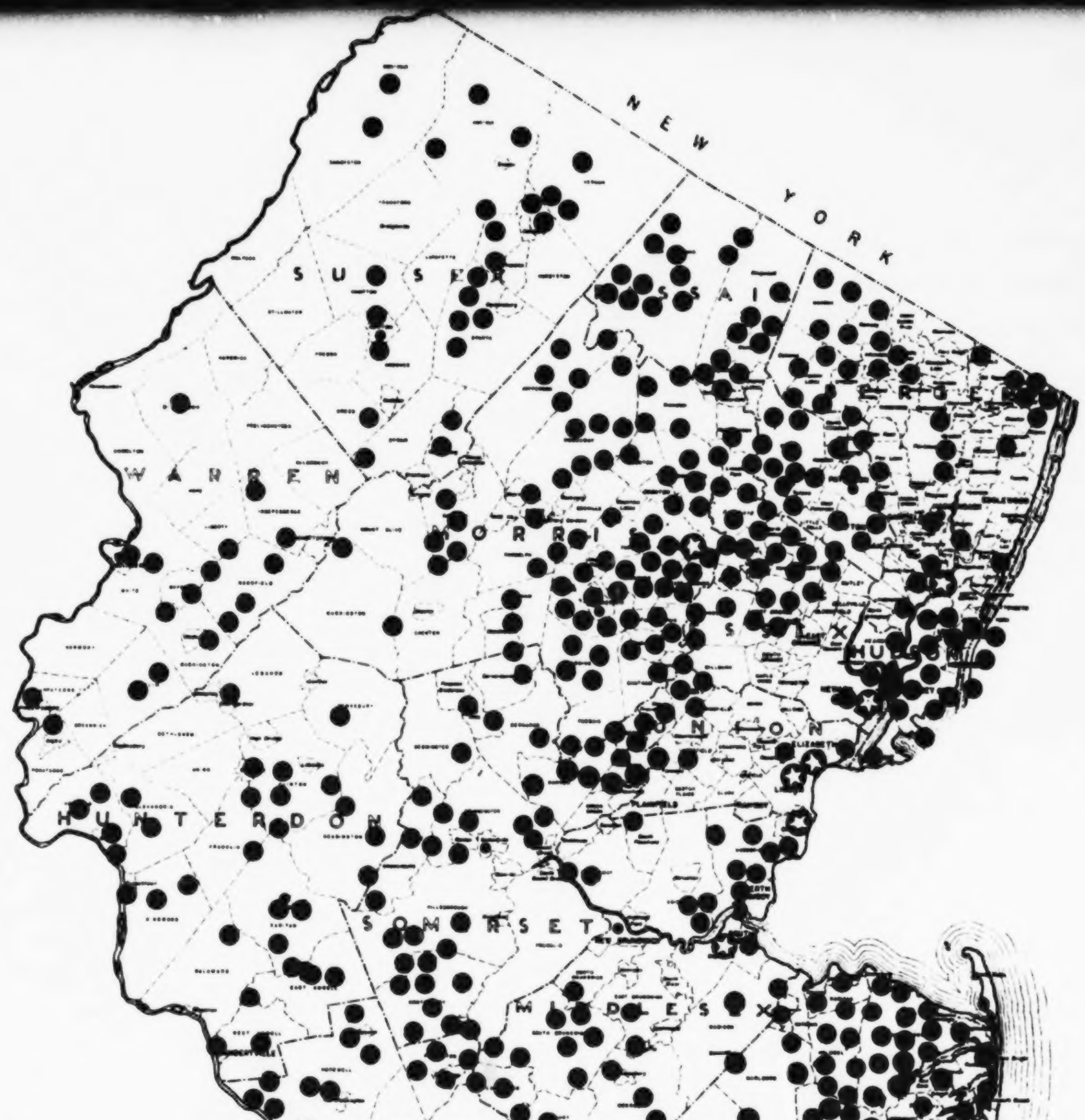

NEW YORK
SUSSEX
PASSAIC
BERGEN
WARREN
MORRIS
ESSEX
HUDSON
UNION
HUNTERDON
SOMERSET
MIDDLESEX
MERCER
MONMOUTH

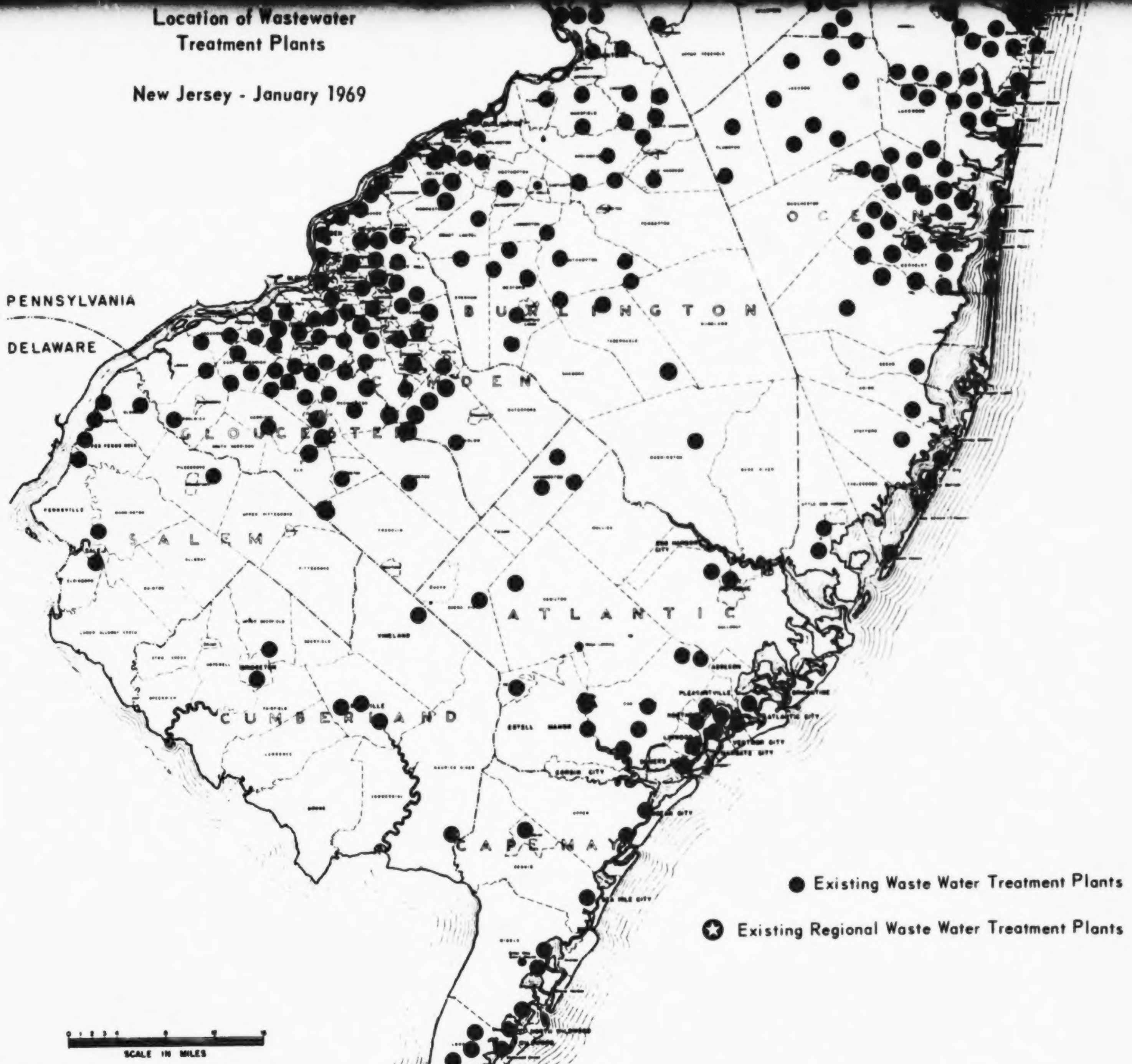
Plate 1

Location of Wastewater
Treatment Plants

New Jersey - January 1969

Location of Wastewater Treatment Plants

New Jersey - January 1969


PENNSYLVANIA
DELAWARE
BURLINGTON
OCEAN
CAMDEN
GLOUCESTER
SALEM
ATLANTIC
CUMBERLAND
CAPE MAY
ATLANTIC CITY
PLEASANTVILLE
VENTNOR CITY
MARGATE CITY
VINELAND
● Existing Waste Water Treatment Plants
✪ Existing Regional Waste Water Treatment Plants
SCALE IN MILES

NEW JERSEY STATE DEPARTMENT OF HEALTH

M6241

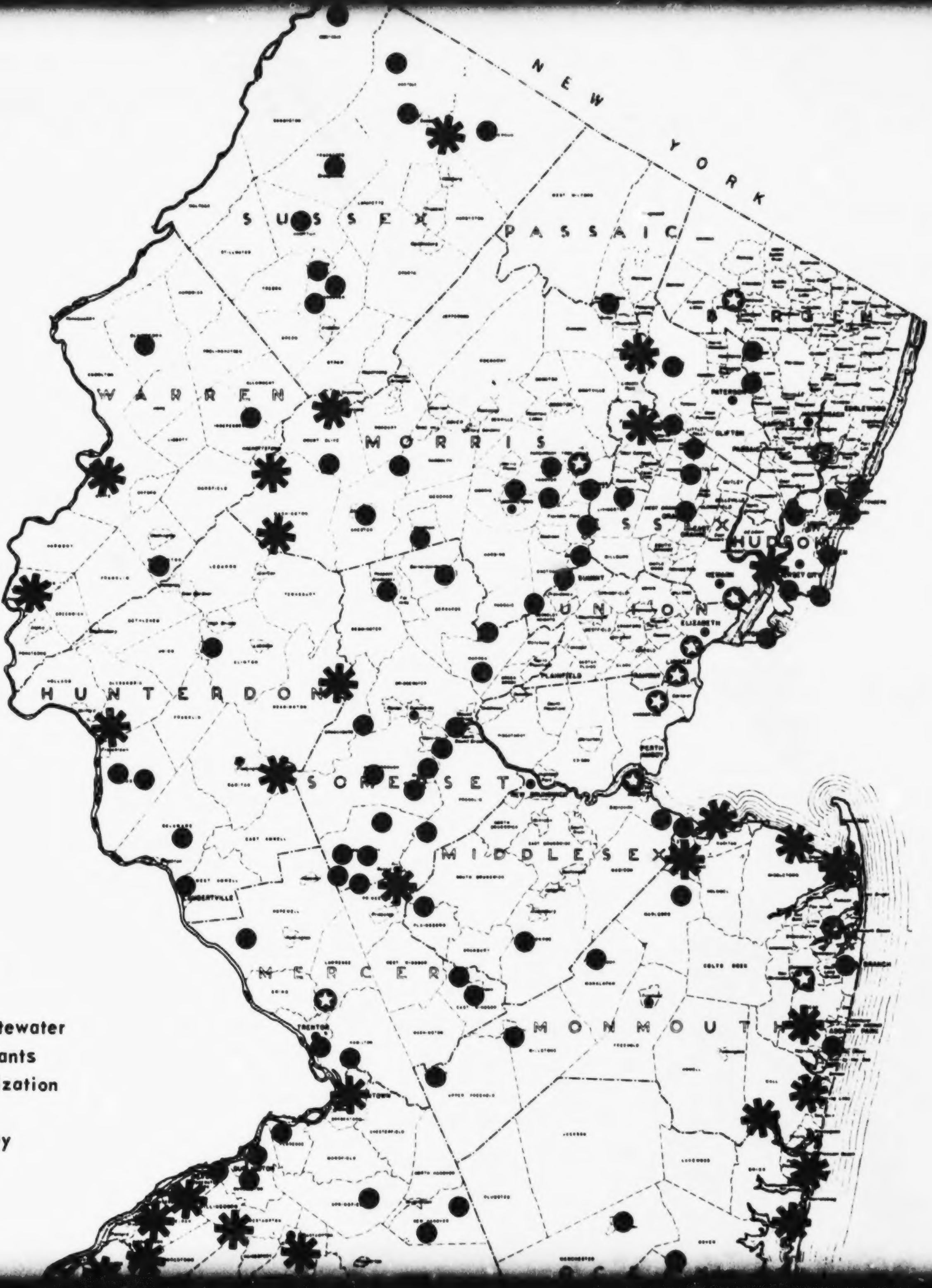

NEW YORK
SUSSEX
PASSAIC
BERGEN
WARREN
MORRIS
ESSEX
HUDSON
UNION
HUNTERDON
SOMERSET
MIDDLESEX
MERCER
MONMOUTH

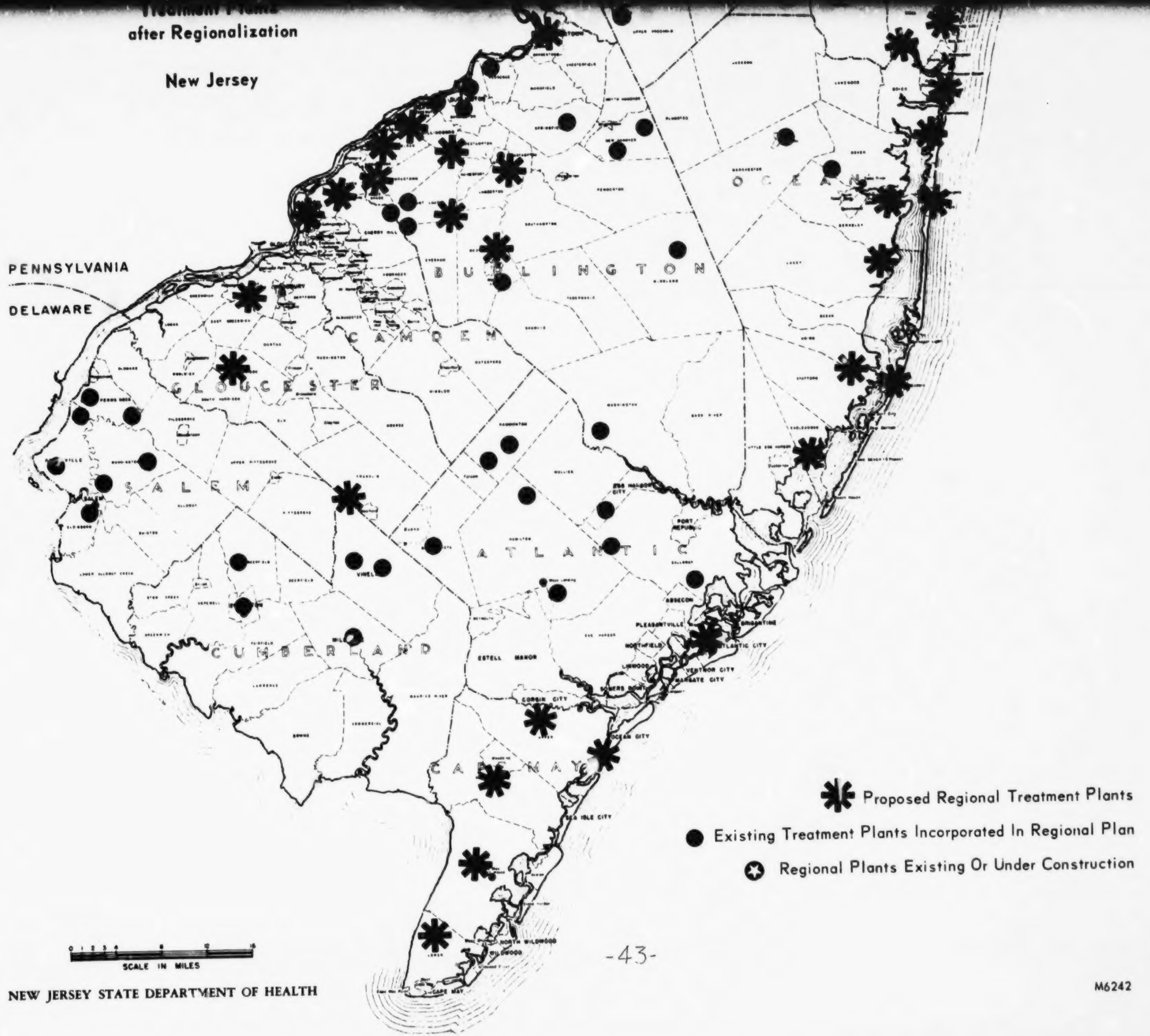
Plate 2

Location of Wastewater
Treatment Plants
after Regionalization

New Jersey

Treatment Plants
after Regionalization

New Jersey


PENNSYLVANIA
DELAWARE
BURLINGTON
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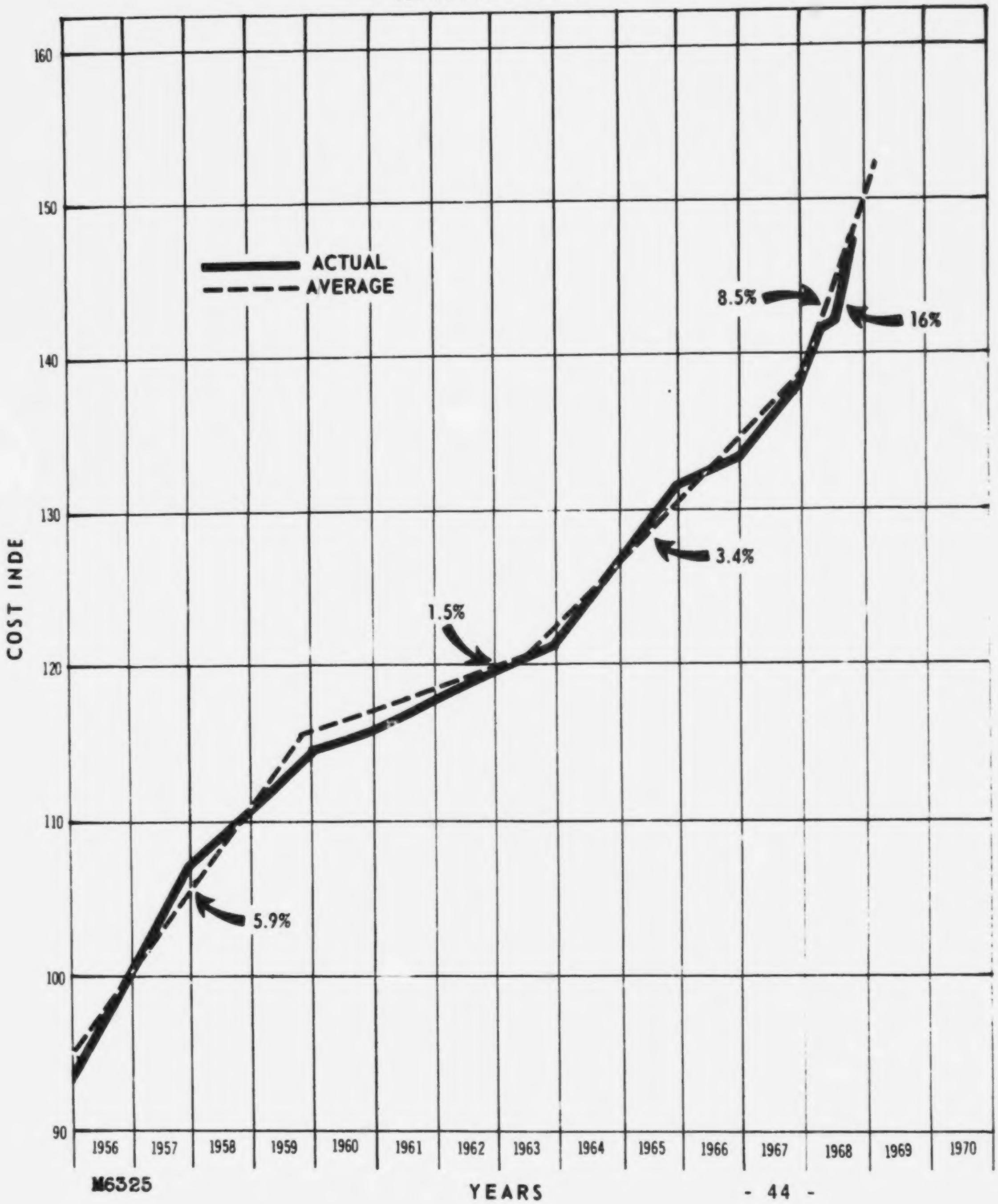
CAMDEN
GLOUCESTER
SALEM
ATLANTIC
CUMBERLAND
CAPE MAY
ATLANTIC CITY
OCEAN CITY
ESTELL MANOR
Proposed Regional Treatment Plants
Existing Treatment Plants Incorporated In Regional Plan
Regional Plants Existing Or Under Construction
SCALE IN MILES
0 1 2 3 4 8 12 16

NEW JERSEY STATE DEPARTMENT OF HEALTH

Plate 3

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

Wastewater Treatment Plant Construction Index for the New York Area



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MR. STEIN: Are there any questions or comments?

MR. METZLER: Well, I would sort of like to make a comment first.

This is the kind of a statement we have come to expect from the State of New Jersey in the last two or two and-a-half years. It is a very fine statement and it is backed up by performance. You have worked very hard and fast.

There is one question I would like to ask, if you feel free to answer, in terms of the legal action that the State of New Jersey has against Passaic Valley.

Yesterday we did see projections that are tight but realistic by New York City for its major sources of pollution.

Can you tell me when you actually expect Passaic Valley to complete the treatment works so that it will be treating its wastes?

MR. SULLIVAN: I cannot tell you when I expect it. I do not expect it by the fall of 1970, which is called for by the order, that is for sure.

A representative of Passaic Valley is here and will testify in his own behalf shortly, and perhaps you can address the question to him.

In any event, if there is any alteration made in the schedule contained in our order against Passaic Valley, it will be a product of the court litigation in which we are now engaged, and I would like to leave all possibilities available for negotiation at that time.

MR. STEIN: Are there any other comments?

MR. GLENN: No.

MR. STEIN: Or questions?

MR. KLASHMAN: No.

MR. STEIN: I would like to make just one, and this is really a technical comment, Mr. Sullivan, because I think your statement is a really excellent one.

You raise the point here that has always been a fascinating point to people who have spent most of their lives in Federal-State relations and in the grants field when you say that even if we had all the funds developed appropriated, you would just get eleven per cent. I alluded to that in my remarks to Mrs. Jones.

To go back in history, this used to be known as the Harold Ickes (a former Secretary of the Interior) kind of rule of a Federal grants program. Secretary Ickes used to say that any bright young man could develop a meaningful grants program, but unless you cut that pie 50 ways, or 48 ways at that time, there is no way to get it through the country. The limiting factor in our grants programs, and this is the thing that everyone has to look at-- this does not deal with just water pollution grants, but many grant programs--the limiting factor on this program, whether we had the 30 per cent grant, the 50 per cent grant, $250,000 limitations or $600,000 limitations, was not these limitations in that part of the statute, but the provision which provided for the allocation to the States.

We get all kinds of flexibility, sliding scales, how you can move up or down, whether you have standards, an active program and get a little more money. There is only one thing immovable in the statute, and this is straight mathematics. It is how much we allocate when the funds are made available to each State, with no discretion at all.

You have pointed out with telling force these figures--why the percentage of Federal appropriation over the years has been relatively low. The limiting factor was not that limiting factor of 30 or 50 per cent in the statute, but that other provision which limited your total Federal allocation for New Jersey.

I am speaking to you people who are in this field technically because this is a technical discussion. You have raised a very technical point.

None of these provisions will reach the fulfillment that anyone in any field who is working on a grant program desires, unless you also pay careful attention to that splitting of the pie 50 ways, and, after all this is done, how much New York State, New Jersey or Nebraska will have.

I think this is a key point in grant legislation. You have made your point very clear as to what the problem is, of course.

MR. SULLIVAN: Could I make one brief response to your comment, Mr. Chairman?

MR. STEIN: Surely.

MR. SULLIVAN: I understand that these are the limiting factors, in fact. I can't help but feel that those who dreamed up the 55 per cent were sadly informed as to the financial dimensions of the problem, or they could not have been that far off.

Point Number 2: I don't think 55 per cent is necessary. We have been operating in New Jersey, as I pointed out here, for 20 years with a 96-3-1 formula.

Well, that can use a little improvement for sure, but I don't think it has to go to 55-25-20. That is the other extreme. If half of the costs were non-local, it would seem to me to be equitable distribution.

But the final point: It infuriates me to read engineering reports made to show what is feasible in the way of regionalization, and we have had these all over in New Jersey, almost invariably setting forth what the costs will be to the householder if we get the 80 per cent aid provided by statute. Of course, if you are not that lucky, they will also put in small print what the cost will be absent the 80 per cent aid, but the absence of the 80 per cent aid is such an absurdity that the presence of the numbers doesn't disturb us.

MR. STEIN: Are there any further comments or questions?

(No response)

MR. STEIN: If not, thank you, Mr. Sullivan. Would you continue?

MR. SULLIVAN: Yes. I would now like to call Mr. Seymour Lubetkin, who is Chief Engineer of the Passaic Valley Sewerage Commissioners.

STATEMENT OF
MR. SEYMOUR LUBETKIN
CHIEF ENGINEER
PASSAIC VALLEY SEWERAGE COMMISSIONERS

MR. LUBETKIN: Mr. Chairman, members of the audience:

I did not originally expect to give a statement before this board. However, I made some notes on the way here, enough to keep you on the edge of your seat for four or five hours, but you look so nice I don't think I will bore you that long.

One of the problems, of course, is the general pollution control situation. Passaic Valley has been called the greatest polluter in New Jersey. We seem to be Peck's bad boy when it comes to anything involving pollution in this area. We are criticized on most items that in any way relatte to the Passaic River, even, inferentially, beyond our jurisdiction.

It has gotten to the point that if there were a fire in this hotel, I might expect to see a headline, "Fire in the Statler-Hilton. Passaic Valley speaking on a hot item."

I know this sounds facetious and I understand why a lot of it is done, and some of it is justified. It is difficult to move a body as large as Passaic Valley suddenly in the direction intended with such drastic changes.

I thought I would break this down into several different sections. First, I will give our opinion as to the requirements; second, I will tell what we will do in terms of solution; and, third, some what I hope are corrective criticisms of the program.

Now, the word "pollution" is used by all, including the newspapers, the lay and the technical people, in a very broad sense, and, unfortunately, it connotes different things to different people.

If I may, I would like to give what I generally break down into three broad categories the pollution item.

Number 1. We have items like grease, oil, scum, floatable, those materials which are unesthetic, those materials which are displeasing to the eye, those items which, if we touch them, are displeasing to our senses.

Number 2. We have disease producers, pathogenic organisms.

Number 3. We have those items that contain

BOD or COD, those items which use the oxygen of a stream in order to stabilize itself.

I know there are many other categories, such as radioactive material, thermal pollution, et cetera, but those are not relevant to the particular topic at this moment.

I mention these three items because, generally speaking, John Q Public, the man who pays the bill, and the object of the newspaper reports, knows of only two of those items -- that is 1 and 2 -- that which he sees with his eyes, and that which he is afraid of because of disease.

We have used the word "pollution" to cover all three items, and, technically speaking, we are, of course, correct. Many a time we talk of Item 3, but John Q Public pictures in his mind Items 1 and 2.

This is a fact that I recognize, and I believe it is necessary, because the general apathy of the public to Item 3 would be nil, particularly if we realize the ratio of costs involved for producing the requirements of Item 3 as compared to those of 1 and 2.

Thus, when we show them discharges of highly colored and offensive looking materials that may come from Manhattan along the docks, and, incidentally, I am not criticizing New York City -- I have a great respect for Marty Lang and his co-workers on what they are doing.

We have equivalent areas in New Jersey, and John Q is told we require X-X-X-millions of dollars to clear this up. We are not lying to him, but, in a sense, we are not telling him the truth.

John Q is not interested in the BOD. He is interested in the beaches being accessible for bathing. He is interested in the appearance.

I am leading up to a point, as you may gather, and I do not wish to diminish the importance or the effect of Item 3, BOD, but that item is a difference in cost many times over the removal of the other two items. And if we had unlimited funds, there is no question that, in my opinion, this is the proper way to proceed.

Also, there is no question in my opinion that BOD removal is necessary. I may question at this point the amount of removal necessary to meet the criteria as set up in the specific waters of the New York Harbor, and I may question at this point the specific criteria set up for those waters.

For many, many years, 30 percent dissolved oxygen was considered adequate. Be that as it may, the powers that be have decided 50 percent, and the powers that be have calculated and decided that 90 percent average removal or a minimum of 80 percent removal of the BOD is necessary for wastes discharging into these waters in order to achieve the results that they desire.

I don't doubt that they have projected for the future. I don't doubt that eventually this type of removal will be necessary. The statement might be made then, "Well, if it will be eventually necessary, why object at this point?"

For two reasons: (1) The lack of immediate funds; and (2) the science of sewage treatment. The science of sewage treatment today is in the dark ages. We generally set up a system where we have biological organisms literally feed on the sewage in what we consider a prime habitat, ideal conditions. Analogously, it might be equivalent to the disposal of garbage by having a large pig farm and letting them eat it.

This appears to be the best we have today. Slight ramifications and modifications have been made to improve the ideal conditions, but these plants are subject to upset by toxic materials, by various wastes that may be different for the climate that is generally set up for the bacteria; and it appears to me that when we consider sewage an object of high energy level and the final effluent an object of low energy level, that our science will shortly develop a method, either mechanical, electrical or chemical, to go from the one step to the other and achieve the results we really want in a much more efficient manner that is known today. I believe, with the research going on, this will be very shortly. If and when this happens, many of the millions of dollars spent to polish up plants for extremely high BOD may have been wasted.

I do not wish to imply that all construction on this type of thing should stop. There are many areas where it is critical, and this type of removal is absolutely essential at this time and we cannot wait. I am merely saying that with the limited funds that are available, perhaps the Water Pollution Control Administration might take another look as to the redistribution of funds to more treatment plants with a lesser degree of treatment than with fewer treatment plants and a higher degree of treatment.

Again, I am talking about BOD removal. I am not talking about disinfection. I am not talking about scum, scimmings, oil or grease removal, which we all agree must be accomplished.

Gentlemen, Passaic Valley Sewerage Commissioners have been in operation since 1924. We have a primary treatment plant; that is to say, we do not remove much BOD. There is no question about that. We attempt to remove screenings solids and we have attempted to improve our plant. During the last 14 years we have expended approximately $14 million to the end that our treatment plant be improved in efficiency.

In that expenditure of $14 million, we have received Federal aid and grants in the amount of $625,000. The last grant of $375,000 was given to us after approximately a four to five year delay which held up this project, the original application being made in 1962, approval in 1967, construction went into effect immediately, and we are just finishing this sludge handling facility.

I am just pointing this out to really reaffirm what Mr. Sullivan said, that this tantalizing morsel of Federal aid really held up a project that should have gone forward.

The fact that we disagree with the classification of the New York Harbor and the fact that we may disagree with the method of the allocation of finances and requirements of the Federal Administration does not mean that we will not obey the directives and recommendations of this conference. It is the intent of Passaic

Valley Sewerage Commissioners to comply with the intent, with the recommendations of not only this conference but of the requirements issued by the State of New Jersey.

Not only am I making the verbal statement here, but I will summarize what we are doing in order to comply.

I told you that we are finishing the construction of the sludge handling facilities. We have also hired a consulting engineering firm to do pilot plant studies in order to bring the sewage treatment system up to that required by the recommendations of this body.

We have been told by our consultants that this study will take two years, the wastes being extremely complex and extremely variable, being, as Mr. Sullivan told you, one quarter of the wastes of the State of New Jersey.

In the interim, our consulting engineers have also been directed to prepare plans and specifications for head-in facilities; that is, for more efficient grit, scum, grease and screenings removal and handling.

You may have heard of the talk recently of the problems the Commissioners are having on plant breakdowns. These are due primarily to the completely inadequate grit system we have now.

In order to operate properly, as a good primary plant an absolute essential before we can go to a secondary treatment is that we need new facilities there. These plans and specifications will be ready for bid probably February 1970, at a cost of approximately seven to eight million dollars. This will give you an idea of the size of the plant. This is just one part of the plant.

At this time we will make application to the Water Pollution Control Administration for a Federal grant and we will make application to the State.

Now, I have been informed, and it would be a pleasure for me to hear a contradiction officially, that under the present rules promulgated by the Administration we would not be eligible for a grant for this phase of the program, for two reasons: Number 1, at that time we probably will not have had a complete time schedule and a complete program of secondary treatment as we will still be under a pilot plant study program; Number 2, the Passaic Valley Sewerage Commissioners at present do not digest their sludge before barging it to sea.

I will not go into details at this point concerning the advisability or the unadvisability of digesting sludge before barging to sea. It is enough to say that for us to digest the sludge in the quantities which will be required after a secondary treatment may run as much as $40 million, and there appears to be no evidence that this is of any advantage over undigested sludge in the ocean disposal.

I have been told that both of these points are under review by the Water Pollution Control Administration, and it may be that the rules set up by man may be changed by man at the time when applied for Federal aid on our partial program. This is important, and I am putting it in the record because possibly it may have an influence on the Federal people's attitude, in that if Federal aid is not forthcoming to some extent, we would then not be eligible for State aid, as I understand it, because I believe the State bond issue is tied in somewhat with the Federal bond issue.

If I am wrong, please correct me. If we are not the recipient of any aid, then the chances are that the actual construction of these much needed facilities would be shelved, and again the Water Pollution Control Administration apple will have been a reason for delay.

Subsequent to the implementation of the start of construction on the grit handling facilities, it is the intention of the Commissioners to proceed immediately on repairs and expansions to the basin. This would be concurrent with the pilot plant studies. As soon as pilot plant studies are finished, it is the intention of the Commissioners, assuming finances are available, to proceed with the complete treatment to achieve the average 90 percent BOD removal, minimum 80 percent.

At this time, assuming finances are available, an estimated time schedule will be approximately five years from the time of the completion of pilot plant studies until the end of construction.

Incidentally, I also wish to mention that to the end that the Commissioners are able to finance their own part of this, legislation has been introduced which will enable the Commissioners to float bonds. The legislation has passed the New Jersey Senate and will come up in the Assembly at the next session, and, as far as I can see, there is no objection and it is expected to be easily passed.

I hope that the Water Pollution Control Administration would re-evaluate its position on partial aid and not insist upon a complete program, as long as the recipient promises to continue to improve his plants until the standards are met. I think if this is done in general, it will accelerate construction and make it a shorter period of time before we reach the end result we desire, and interim results may be very effective.

Yesterday I was told the discussion was on the Passaic River. I see a chart and map showing the extent of interest of the Passaic River in our district. Several statements were made, and I would like to comment on some of them.

Number 1. There was a comment on the number of outlets into the river. Gentlemen, we handle the sewage of 29 municipalities. Many of them contain combined sewers, such as Paterson and Newark. During the time of a storm, neither the Commissioners' trunk sewer nor any combined sewer is designed to hold the various floods that can develop, and, therefore, you have emergencies in overflow outlets in many spots located throughout the river which are not used except during times of storms. However, in many cases, clean water connections are allowed to these storm outlets, such as cooling waters, and so forth.

However, there are several definite pollution violations. In the lower end of the Passaic River there are several storm sewers, namely, Lockwood Street, Blanchard Street, Roanoke Avenue, the Meadowbrook storm sewer, all located in the City of Newark, which have illegal industrial connections to them.

We have notified and have been after the City of Newark to remove these connections so that this material should not go to the river. The city has claimed that it has hired testing laboratories and they have just had a difficult time in locating the offenders. This has delayed it to the point where the Commissioners are taking them to court to force them to remove this material from the river. Suit has been filed against the City of Newark on these outlets.

There was mention made concerning debris along the banks of the river. We have been informed by our attorney that we have no jurisdiction over debris on the banks. We have many times informed the individual municipalities that it is their responsibility to clean up the banks within their municipality. There were committees formed in Paterson, and so forth, to do this. There was even a work corps formed, and along Paterson they did a wonderful job and removed a considerable amount of material; and shortly thereafter individuals have dumped on the banks again because of the lack of municipality and police control..

One problem is that when a man has something to dump, for some reason he is going to dump it, unless you give him a legal place to do it. Unfortunately, in most cases this has not been done, but merely a ban has been set up.

I have tried to impress many municipal officials with the idea of setting up a point where this type of refuse or rubble could be brought, and then with the proper propaganda and the proper newspaper reporting maybe we can make everybody his brother's keeper. I have been unsuccessful.

In general, I think these conferences are a good thing. Again, I may not agree with some of the conclusions, but I think we all are moving in the correct direction.

Thank you.

MR. STEIN: Thank you, Mr. Lubetkin, for a comprehensive statement.

I think one of the things the conference does is provide the forum for a full expression of views, and I am glad to have your views and philosophy on the record.

I think also what is a remarkable thing is with the divergent philosophic or technical views that we have in this field, that we can get so close together on a case by case basis on the way we are going to move toward a solution. I think this speaks very well for the system.

Are there any comments or questions?

MR. METZLER: I couldn't let that kind of testimony go without asking a question or two.

MR. STEIN: All right. Mr. Metzler.

MR. METZLER: My curiosity is piqued.

First, Mr. Lubetkin, that was a very informative statement as far as I am concerned. I am interested in two or three points.

First, do you have the tools available to you to abate the pollution? I am talking about the legal and the fiscal, the engineering and financing tools that are available and the land to put the facilities on, and enough to let you acquire what you don't have.

MR. LUBETKIN: I will have to break that question down into several parts.

We have the law which will allow us to acquire the land. We have powers of condemnation. Quite frankly, it is going to be expensive in some parts because some oil companies have made extensive improvements in the harbor area, and if sludge digestion is required we will need land amounting to staggering figures. The land for the remaining type of secondary treatment is not prohibitive.

With respect to the financing, up to now we have not had the tools for financing. We have not had the power to float bonds, except $900,000 which is a residual from a former $10 million bond issue allowed to us. As you know, $900,000 is a drop in the bucket. It would cost more to float the bond than it is worth.

As I said, we have introduced into the Legislature legislation which will enable us to float the bonds. This has passed the Senate, and when it is passed by the Assembly and signed by the Governor we will have the financial tool.

The expected costs are not exactly known at this point. There are estimates all the way from $100 million to $200 million, and although we may have the financial tool, the actual implementation of that may be hindered unless there is Federal aid forthcoming of a reasonable amount, or unless we are allowed to approach this on a piecemeal basis.

As to the legal rights, the Commissioners do have the legal rights.

As to the technical ability to achieve a 90 percent removal, at this point we do not know. Only pilot plant studies will tell us. We assume that it can be scientifically accomplished, but if we absolutely knew, pilot plant studies would not be necessary.

We feel it can be accomplished. In fact, we are negotiating with that type of treatment which showed potential in the laboratory.

Does that answer you?

MR. METZLER: That is very helpful.

Incidentally, you deal with a very difficult waste there and I can understand your concern with pilot plant studies. How strong is this waste now as it is released from the treatment plant?

MR. LUBETKIN: Well, the problem is not necessarily the strength BOD-wise.

MR. METZLER: But it is a dissolved oxygen problem?

MR. LUBETKIN: Right. Well, you see, we have had a tendency -- and I guess I should have mentioned it in my discussion -- to talk of BOD over and over again where another parameter, COD, may be more of a problem in the amount of oxygen required, the difference being, of course, biological demand as opposed to chemical demand, both requiring oxygen.

Our wastes can vary. This is one of our problems. It varies all over the lot because of the extensiveness of the system. We may have 400 or 500 parts per million at times, or we may be lucky to go way down to 300 parts per million at times. We have had COD's up to 700 parts per million. Yet this seems to be a point not covered in the enforcement regulations, perhaps because of the difficulty of the problem, but it is something that we are cognizant of and we will attempt to solve it in the pilot plant studies.

MR. METZLER: Now, on the question about treatment processes being available, I understand that you do think the treatment processes are available to get 90 percent removals now?

MR. LUBETKIN: I said only the pilot plant studies will prove it. We believe that there is a process which has not been utilized as of this time, which, as I said, appeared to be successful in the laboratory, which will give us this removal.

MR. METZLER: You talked about new facilities, and it reminded me of an experience I had with a very well informed city council in 1948, and their engineers wanted to wait because they were sure there was going to be a new breakthrough in sewage treatment, but they did go ahead and build the facilities and not wait for about eighteen or nineteen years. You aren't really serious about waiting for a breakthrough, are you?

MR. LUBETKIN: Serious? I know we can't wait for it.

MR. METZLER: That's good enough.

MR. LUBETKIN: All right.

MR. METZLER: I have one other question, or maybe two.

You said that without aid there will be no facilities. Did you really mean that?

MR. LUBETKIN: Oh, I'm sorry; I didn't think I said "no facilities." I thought I corrected it and said that unless they allow us to do it on a step by step basis. We could not do it on a crash program without aid.

MR. METZLER: Well, I guess that leads to my other question. What is the earliest date at which you see Passaic Valley turning treated sewage with 90 percent of the oxygen demanding materials out, or 80 percent of the oxygen demanding materials out into the river?

MR. LUBETKIN: 1976 or 1977.

MR. METZLER: Thank you.

MR. STEIN: Are there any other questions or comments?

MR. GLENN: I would like to ask one question, Mr. Lubetkin. If after it is already decided what treatment you need, and also if the financing is arranged, is there any action that the Commissioners have to receive from the local communities before you proceed? Is there something? I think I remember that there are some legal steps that have to be taken.

MR. LUBETKIN: Yes, there are legal steps.

MR. GLENN: And how long will this take?

MR. LUBETKIN: The legal steps are as follows: Even though the Legislature will pass it, in order to issue a bond we will have to have a public hearing and it must be passed by the municipalities.

The actual time schedule of that is relatively nominal. We are talking in the order of magnitude of months.

MR. STEIN: Before we go to the other side of the table--I know Dwight Metzler was with us on these cases--but about fifteen years ago we decided that we had a big problem with oil well pollution when brines were coming up, and after awhile they said, "Don't make us collect these brines and build underground injection systems because we're expecting a breakthrough momentarily."

We did go ahead. The brines are being collected with injection. I think most of the oil fields in most of the States are pretty free of pollution now.

I am confidently waiting for that breakthrough. It has not come through yet. That doesn't say that breakthroughs don't take place.

There is one other thing that occurred to me. With respect to the questions that you were asked about BOD, COD and the nature of the wastes, on the other side of the coin of this being a very difficult thing to treat, what is the nature of that waste that is being put out now if it is so difficult to handle? What is going out into the public waters?

MR. LUBETKIN: Well, there's no secret of it. I think everybody has been crying about it. We are releasing waste with a high BOD and a high COD.

MR. STEIN: Not just the BOD. Presumably there are loads of chemicals and other constituents in there.

MR. LUBETKIN: Well, obviously there must be some item that causes BOD. For example, gentlemen, I could discharge the equivalent of a glass of water into water with a tablespoon of sugar and this will have 100 times the BOD on a parts per million basis of the raw sewage.

I don't think this is what the public thinks of when they talk of pollution, although we know technically this will absorb considerable oxygen in stabilizing.

MR. STEIN: Are there any questions on this side?

Mr. Klashman.

MR. KLASHMAN: Yes, I have several questions.

Mr. Lubetkin, do I understand correctly that your plant currently produces somewhere in the neighborhood of a 10 percent BOD and COD removal?

MR. LUBETKIN: Yes, 10 to 15 percent.

MR. KLASHMAN: The highest about 15?

MR. LUBETKIN: Right. Yes, sir, you understand correctly.

MR. KLASHMAN: The other question I wanted to raise was, in the Passaic Valley authority area, could you give us some idea of what the service charge is -- first for the average homeowner? How much does it cost him per year?

MR. LUBETKIN: Well, our present rate is approximately $69 per million gallons.

MR. KLASHMAN: What does it come down to though in terms of an average homeowner?

MR. LUBETKIN: I have never calculated it before. I will have to do it right now. If we assume an average home discharge in the neighborhood of 200 gallons a day --

MR. KLASHMAN: Excuse me. Is it based on the water uses or the actual discharge?

MR. LUBETKIN: It is actually based on metered flow.

MR. KLASHMAN: From the home?

MR. LUBETKIN: No, from the municipality. We do not bill the homeowner.

MR. KLASHMAN: What is the cost to the homeowner though? That is what I want to know.

MR. LUBETKIN: I understand.

MR. KLASHMAN: Good.

MR. LUBETKIN: If we assume the average homeowner discharges in the neighborhood of 200 gallons per day, we have roughly 70,000 gallons a year, give or take a little with industrial wastes, so you might say 100,000 for round figures, so it costs the average homeowner about seven dollars a year.

MR. KLASHMAN: So the average homeowner pays about seven dollars. I think that is a very good rate.

The other question I wanted to ask is, as far as industry is concerned, is the charge to the industrial user based simply on flow, or is it based on the load that he is putting in?

MR. LUBETKIN: This is another problem. I didn't know the conference this morning wanted to go into details such as this.

By law and by contractual agreement, the charge is based strictly on flow, regardless of concentration and demand. This may have been satisfactory with a primary plant, but it will be totally unsatisfactory as we go into secondary treatment, and it appears that we will have to go in for a completely new rate structure which will entail the calculations of transfers of BOD demands, and so forth.

MR. KLASHMAN: So at the present time, then, the industrial user is charged only by flow and not by the strength, but this will be changed?

MR. LUBETKIN: When you say "industrial user," we in most cases, with one or two exceptions, charge the municipality on the aggregate flow from the municipality, which will include the industries, and it is the municipality's discretion as to whether it wants to charge its industry individually or whether the tax structure is such that it is not necessary.

There are two exceptions where industries have direct contracts with Passaic Valley, and that is the Marcal Paper Mill in Fairlawn and a group of industries called Fairlawn Industries, also in Fairlawn. All others pay through the municipality and we do not have individual metering of the industries.

MR. KLASHMAN: The two industries that you do charge pay this $69 per year?

MR. LUBETKIN: No. They pay that plus a rental fee, which is not kept by Passaic Valley but is returned to the other municipalities to reimburse them for their portion of the original construction costs, because these industries did not participate in the original construction. It is a relatively nominal fee.

We have been attempting to get a change in the Legislature, and again have not succeeded. This is set by statute as $2500.

MR. KLASHMAN: How much, $2500?

MR. LUBETKIN: $2500 per million gallons a day for one year. That is in addition to our operating and maintenance cost. It amounts to roughly --

MR. KLASHMAN: Say that again.

MR. LUBETKIN: The $2500 is a yearly rental which allows them to discharge a million gallons each day.

MR. KLASHMAN: I'm with you. I was just concerned by the $2500 divided by 365.

MR. STEIN: That's the advantage of an education at M.I.T. (laughter)

Are there any other questions?

MR. KLASHMAN: I have a few more questions.

Are there any ordinances requiring pretreatment by industry?

MR. LUBETKIN: Yes, but not worded in that manner. The ordinance we have states that no industry or municipality shall discharge into the sewer oil, grease or any waste which is detrimental to the sewer or its operation. Therefore, interpreting, we can imply that if a waste is detrimental we can require its pre-treatment.

MR. KLASHMAN: On the cost per home -- in other words, if they are paying about seven dollars per home, and my experience has been that the rates will go somewhere between 40 to maybe $80 per home, there is quite a bit of leeway there. In other words, you could increase your rate perhaps 10 times and still be within the rates that surrounding communities are paying; is that correct?

MR. LUBETKIN: I do not believe 10 times is the correct figure.

MR. KLASHMAN: I was thinking 10 times 7 is 70.

MR. LUBETKIN: I understand, but I am not familiar with the rates of surrounding communities. I didn't believe it was as high as $70 a home. I could be corrected on that.

MR. KLASHMAN: Let me ask you this just to clarify something else in my own mind.

As I understood you, you indicated that assuming the financing can be worked out, that your schedule calls for completion of pilot plant studies and first completion of the contract with the engineers within a month, about?

MR. LUBETKIN: No, no.

MR. KLASHMAN: The contract?

MR. LUBETKIN: Oh, the signing.

MR. KLASHMAN: Will be about a month?

MR. LUBETKIN: Right.

MR. KLASHMAN: So that will be sometime in the end of July or the 1st of August, and by June of 1971 the pilot plant studies will be done?

MR. LUBETKIN: Will have been completed.

MR. KLASHMAN: And then, by June of 1976, assuming that other financial arrangements can be worked out, the secondary treatment plant would be completed?

MR. LUBETKIN: Yes.

MR. KLASHMAN: And in operation. That's all.

MR. STEIN: Mr. Sullivan, do you have any comments or questions?

MR. SULLIVAN: Well, the merits of our official differences are being debated in another forum and I am not going to bring them up here. I have a couple of brief comments, however.

Number 1, and it is really a question, I wonder if, in addition to the seven dollars per household, you have any idea of the other fee charged by the municipality for the maintenance of the collection system?

MR. LUBETKIN: No, but in some cases I do know there are such charges. In other words, our charge has nothing to do with the local sewers. We maintain the main trunk and the treatment plant, and it is up to the municipality to maintain its local collection system and make its connections.

I do know that in many cases there are charges made to industries and such for this. Some of them are even appended onto their water fee, so it is true that this seven dollars may not reflect the total cost to the homeowner.

MR. SULLIVAN: One other technical point of information. It is correct, as you suggested earlier, that the eligibility for Federal and State funds coincide.

What is eligible for one is eligible for the other, and the converse is true.

I think it is important to emphasize, and this point was made by several people yesterday and made again by Mr. Lubetkin, that the decision on whether sludge digestion must be provided is a very important one in the plans for the upgrading of this facility.

I think it is very helpful that Mr. Lubetkin was here, and I think that the answers that he has given us **have** made a very useful contribution to the record.

MR. STEIN: Are there any other comments or questions?

MR. KLASHMAN: Mr. Lubetkin, I just wanted to make one other comment for the record. You raised two questions about the fact that under our present policy we would not process a construction grant; first, unless you had what we call acceptable treatment, which includes sludge digestion; and, second, this question about unless we knew that you had a firm schedule to meet the Secretary of the Interior's enforcement conference recommendations; that unless you met these two things we wouldn't give a grant.

On the first item, the one about the sludge, the Department and the Administration is very much concerned about this, and this is under review, so I can't comment on that.

On the second question, it has been our policy that when a grant is submitted to us, if we don't know what you are talking about -- in other words, if a grant comes in for $5 million or 10 or 20, whatever it is, and you tell us you are going to build a secondary treatment plant but we have no idea what you are talking about; we don't have the plans and specifications; we don't have any preliminary report -- we don't feel that we can obligate Federal funds because we don't even know what the project is.

This has been our policy in the past, and, personally, I don't see any let-up on this. It seems to me that before we can give a grant, we have to have some idea of what you are talking about, and we can't just go on the basis of fact of verbal -- you know, that you say some day you plan to meet the objectives.

MR. LUBETKIN: Mr. Klashman, I realize that has been your policy. I attempted to point out that I didn't think it was a good policy in order to get the maximum for your dollar.

For example, not just Passaic Valley, but there may be other places where they have sufficient money to do a partial job, maybe set up the primary part which is preliminary for secondary treatment, immediately getting in a collection system, but if they are held up until they have a whole project laid out, you, in my opinion, have helped delay the elimination of pollution.

Now, I realize this is a point where we just differ in opinion. I did just want to get on the record that I felt that under certain circumstances, even though a complete program may not be forthcoming, if what is presented in itself will help relieve a portion of pollution, it should be considered on its own merits.

MR. STEIN: Are there any other comments or questions?

(No response.)

MR. STEIN: You know, you have had some very good statements here, and I think this has really amplified the record, But it does bring to my mind as a final comment something that Mr. Sullivan has in his statement where he says, "Our statutes," and I guess the Federal statute is the same in this regard, "do not say it is okay to pollute if you are poor."

The corollary of that would almost seem self-evident. The statutes do not say it is okay to pollute if you are rich and you say you are poor.

Now, ostensibly, I see in the Passaic Valley the potential for a tax base with some 700 industries and millions of people that very many of the communities that Mr. Metzler and I have been dealing with in the midwest would be delighted to have if they were ever going to assess costs, and we also have a sewer service charge which seems to be very attractive indeed, and it probably ranks with the lowest in the country.

I think the challenge to the Federal, the interstate agency and your agency is, if we are sitting on a situation like that where we have this tremendous industrial complex which appears to be as rich as any, with as low a charge as we appear to have, and if we have a pollution problem, isn't there a way to really meet this and get this going? I don't know. That may be rhetorical.

MR. LUBETKIN: I will answer with an opinion of mine.

MR. STEIN: Go ahead.

MR. LUBETKIN: A lot of people may not like this. If there was no Federal grant program whatsoever, I think more progress might have been made in New Jersey.

MR. STEIN: That's a fair enough statement. Maybe we ought to proceed without it. Are there any other comments or questions?

(No response.)

MR. STEIN: Mr. Sullivan.

MR. SULLIVAN: I just wanted to state that if there is anyone from the State of New Jersey who would like to come forward and speak on the subject of the conference, the invitation is extended.

MR. STEIN: Thank you very much, Mr. Sullivan.

Mr. Klashman, do you have anything?

MR. KLASHMAN: Mr. Stein, yesterday Mr. Bromberg, when he made his statement, was asked to furnish a supplemental statement today, and I would like to call on him to make that statement now.

Mr. Bromberg.

SUPPLEMENTAL STATEMENT BY
MR. ALBERT BROMBERG
CHIEF OF OPERATIONS
HUDSON-DELAWARE BASINS OFFICE
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
EDISON, NEW JERSEY

MR. BROMBERG: Mr. Chairman, as Mr. Klashman indicated, I would like to supplement my statement of yesterday in answer to a question that you raised or the conference had raised.

This question was in relation to Item No. 4 in our summary and conclusions of our combined sewer overflow report, which stated, briefly, that studies are needed in the conference area to, first, quantitatively and qualitatively determine the characteristics of combined sewer overflow, and, secondly, the effect of combined sewer overflow on quality in receiving waters.

Your question was in relation to the type of studies required and resources and costs and time involved in carrying out these studies.

A meeting was held last evening with representatives of the States of New York, New Jersey and the Interstate Sanitation Commission and the Federal Water Pollution Control Administration. An agreement was reached between the representatives of these agencies, and the following program has been suggested:

1. That a detailed inventory be developed of the 43 combined sewer collection systems existing in the conference area. This inventory would include a complete analysis of each system, inventorying such items as number of overflows, type of regulator, service area, and so forth.

We have estimated that to undertake this inventory would take approximately five men one year. If this work were to be undertaken by representatives of the agencies who held this meeting, we estimate its cost would be approximately $100,000.

MR. STEIN: Does that include the payroll costs of the five men, or do you need additional men?

MR. BROMBERG: This is basically payroll costs.

MR. STEIN: Thank you. All right.

MR. BROMBERG: If such a program were to be taken on an outside contract, we estimate the cost could approach $200,000.

We would like to further suggest that the program be continued after the generation of this inventory. We would now have the basis for developing a program for further work investigating the problem of combined sewer overflow. This might consist of the selection of specific or certain combined sewer overflow systems or discharge points on which further study might be conducted to gather detailed information regarding the character of these overflows and their effect on water quality.

MR. STEIN: Thank you. Are there any

comments on that?

MR. METZLER: There is one comment.

Your statement indicates that we agreed on this, and we are, but I want to point out that in no way do I want this to be regarded as diverting our attention from the main goal immediately ahead of us, and that is getting adequate secondary treatment throughout the conference area. This is not to serve as a basis for a slowing down or delaying the cleanup that is within our grasp or that is possible.

MR. KLASHMAN: Mr. Metzler, we certainly concur with your statement.

MR. STEIN: May I make this clear about the status of this statement?

As I see it now, this is for the consideration of the conferees. It may have been a statement made at the request of the Chairman for a technical staff to get together. This will be taken up by the conferees subject to accepting or rejecting or modification as they see fit.

Are there any other comments or questions?

(No response)

MR. STEIN: If not, thank you very much

for your efforts. It has been very helpful.

Do the conferees wish to say anything now, or is there anyone in the audience who wishes to make a statement at the present time?

We are going to recess and go into Executive Session at this time. This will foreclose, at this session of the conference at any rate, any more audience participation, so if there is anything anyone wants to say, now is the time to say it. If not, the conferees will meet in Executive Session in the room that Mr. Klashman has, which you will get from him and which is very close by. We will hope to have an announcement at about 3:00 this afternoon. I assume we are going to lunch first.

The one thing we are certainly not going to do is rush this in any way, because we are at the real tough point of a very complicated problem, and we certainly want to be sure of where we are going in all these cases.

I will give you the notion of what we have. While we deal with very, very important cases, sometimes when you are just moving into a gross situation, as we did when we first came into this pollution problem, all we wanted to do was make the conclusion that pollution was occurring and that adequate waste treatment should take place by a certain date, and that we should move rather rapidly.

As the program develops, as this one has, where we have to go point by point and problem by problem with a scalpel, as it were, the case gets very very complex.

We are going to have to evaluate this and come out and be as accurate as we can in our statements, so we will be back at either 3:00 or have word at 3:00 as to when you might expect a statement from the conferees and we will stand recessed until we reconvene.

MR. ROGOWSKI: Mr. Stein, one more witness has arrived.

MR. STEIN: Who is he?

MR. ROGOWSKI: Mr. Grant has arrived.

MR. STEIN: Mr. Grant, will you come up? May we have your full name?

STATEMENT BY
MR. GARDNER L. GRANT
VICE-PRESIDENT
THEODORE GORDON FLYFISHERS, INC.

MR. GRANT: I am Gardner L. Grant. I am the vice-president of Theodore Gordon Flyfishers, Inc., and I have a statement I would like to make to you on the subject of the Croton River which flows into the Hudson.

There's a popular song entitled "Who Can I Turn To?"--and that's the question we pose to you today in telling you the 1969 story of the Croton River. The song is pretty. The story decidely is not.

The people of the State of New York think they have a law and a Water Resources Commission together with an effective conservation department to implement both and thus protect the streams and rivers of the State from pollution and despoilation. We have this illusion of such protection, but in the following account, you can see we certainly don't have the substance.

The lower Croton River in Westchester County, flows from Cornell Dam (which impounds the Croton

Reservoir) to the Hudson, and it is fed, chiefly, by the overflow of this dam. It's a unique river ranging from a brawling torrent in the spring to a virtually dry watercourse in some reaches during the summer. It forms the water supply for the Village of Croton, provides two major swimming areas (one private and one public),is the spring spawning ground for runs of striped bass and herring, and is host to populations of trout, bass, perch and other species. This river is a unique recreational asset--just a long cast from the Nation's most populous region, where it is so vital to preserve and, if possible, expand such resources.

In 1964, a gravel mining operation in the river bed created heavy damage through turbidity and siltation--shoaling and choking pools with silt, leaving debris scattered downstream, and finally depositing concentrations of silt in the estuary where the Croton joins the Hudson. Even then, there were New York State laws intended to prevent this sort of damage, and through the action of aroused citizens, the New York Conservation Department was moved toact against the mining operator who was dredging gravel without a permit.

An article entitled "The New Stream

Protection Law" appeared in the February-March 1966 issue of "The Conservationist"--the excellent magazine published by the New York Conservation Department, discussing the present day boom in construction of buildings, airfields, highways and similar projects, the article comments:

> "The needs of these projects often seem to require that a stream be dredged for gravel, filled with wastes, displaced from its bed or otherwise disturbed. Too often, to meet these needs, another portion of good recreational water is destroyed unknowingly and unnecessarily. A part of our dwindling resources is gone, perhaps never to return."

A photograph included in this article shows a bulldozer pushing gravel along the bank or bed of a watercourse, and the caption beneath states:

"The new law will help curb this culprit."

Thus, in 1966, we, along with others, concerned for the Croton and for pure water throughout the State of New York, welcomed this law and the apparent enthusiasm of the Conservation Department for its implementation. The article concludes with the words, "The goals of the law as they seek to protect a part of our most valuable resource are worthy of our best efforts. We propose no less."

Later, when Governor Rockefeller succeeded in gaining approval of a billion dollar bond issue to clean up pollution of New York's waters, it seemed that our State Government was inviolably committed to an all-out effort to prevent and eliminate water pollution.

On December 9, 1968, an application for removal of gravel, by dredging, from the Croton River was made to the Region 8 Conservation Department Office in New Paltz, New York, by the same party who was apprehended for the 1964 river damage. Public notice of the application was made in a manner which practically assured that these citizens who had alerted the Department to the 1964 gravel dredging violation, would not learn about it in time to express an opinion to the Conservation Department as provided for by law--(The law, of course, is the "Stream Protection Law" we have referred to). Accordingly, there were no "objectors" to the application on record, when the Local Permit Agent (a member of the Conservation Department) found the proposed work to be "in the public interest" and granted a permit for the gravel dredging on January 22, 1969.

Despite our efforts to obtain an explanation from the Conservation Department, which we shall describe, we do not know how or why the proposal was found to be "in the public interest" and thus qualified for permit issuance. The avowed purpose for the proposed operation referred to improvement of applicant's property through the enlargement of an existing swimming area--an area already large enough for any swimming use by those using this private swim area except possibly the training of cross-channel swimmers.

We suspect that the applicant's true purpose was the sale of dredged gravel to a contractor working on a nearby State highway construction project. We have been informed that the cost of Croton River gravel delivered to the construction site is around $4.00 to $6.00 less per cubic yard than gravel delivered from an alternative source. The permit covered removal of 20,000 cubic yards of gravel--but as of June 15, we have reliable estimates that something like twice that amount was actually removed, and at the stated cost differential, it was certainly to someone's private interest to remove and sell this gravel but certainly not in the public interest.

In addition to the twelve "conditions" printed on the form (some of which were subsequently violated), the permit stipulated special condition No. 13:

> "The permittee will take whatever measures are required to control turbidity and siltation resulting from this project."

The permit became valid January 22, 1969 and was to expire June 30, 1969. This time period is vital because the normal period of the spring runoff occurs right in the middle of it. When the annual spring overflow at the Cornell Dam is known as one of Westchester's scenic wonders--sending torrents of water sweeping down the gorge--it seems incongruous that anyone expected to avoid "turbidity and siltation" from a downstream gravel dredging operation yet the Conservation Department had to make just such an assumption in granting the permit. Unfortunately, they were wrong.

T.G.F. (Theodore Gordon Flyfishers, Inc.) first learned of the issuance of this permit at the beginning of March, and our President at that time, Joe A. Pisarro, wrote to Conservation Department Commissioner

Kilborne expressing concern for the river and urging him to stop the dredging and prevent anticipated damage. The Commissioner responded on March 21 to the effect that no action on his part was indicated.

Subsequently, our members (along with others concerned for the river) have made frequent visits to the river to inspect and photograph developments. Between March 4 and May 22, 1969, we held numerous discussions on the 'phone and in person with members of the Conservation Department (primarily in Region 8), chiefly to apprise them of our observations and to ascertain what action, if any, they were taking in the evolving situation.

On March 20, 1969, after discovering what we considered a serious violation of the permit, our president, Robert N. Johnson wrote to Mr. Terrence Curran, Central Permit Agency, Albany, N. Y., presenting the facts we had discovered together with a photograph of the subject matter, and in the belief that damage to the river was imminent, requested an immediate public hearing where we and other concerned parties could furnish information on the developing operations of the permittee which, in our opinion, made serious turbidity and siltation inevitable.

On April 8, T. P. Curran, Central Permit Agent, replied to our March 20 letter--completely disregarded the evidence we presented, completely disregarded our request for a public hearing--stated that:

"There is no legal basis for action by me," and referred us back to the Local Permit Agent, New Paltz, N. Y., Region 8, who had told me, just prior to our March 20 letter that the matter was now out of his hands and must be referred to the Central Permit Agent.

On April 10, 1969, W. Mason Lawrence, Deputy Commissioner of the Conservation Department, wrote the Town Clerk of Cortlandt, New York, in response to a request for Conservation Department guidance, to the effect that there would actually be ecological benefits derived from the subject dredging operation--"a sizeable pool"--"to carry fishlife through the summer months"--that danger of turbidity and siltation had been taken care of by a Department statement in the permit, requiring the permittee to take measures to control turbidity and siltation; that the "matter of a bridge allegedly having been constructed over the river is being investigated. We appreciate your bringing this to our attention." He wrote this despite the fact that Region 8 personnel had informed the Albany headquarters of the existence of the bridge early in March, and the enclosure of a photograph of the bridge enclosed with the T.G.F. letter of March 20.

As we had warned, and pleaded with this Department to recognize and prevent, the high water did surge through the gravel excavation carrying downstream with it untold amounts of silt, gravel, debris, uprooted trees and the cuttings of the growth which once lived on the banks stripped away by this "property improvement" operation, which had been judged "to be in the public interest".

With the Croton turbid all the way from the mining area, downstream, to its confluence with the Hudson, and undoubtedly depositing tons of silt and debris from its ravaged bed and banks--the Conservation Department on May 2, 1969, rescinded that permit of January 22, 1969. It further ordered the dredging operator to remove his equipment from the river and gave him a period of days in which to dismantle and remove the bridge "allegedly" constructed over the river.

On May 14, 1969, days after the bridge was to have been removed per Department orders, I visited the site with other interested parties, observed and photographed the bridge still in existence--vehicles passing over it--equipment still dredging and hauling gravel from the river bed and banks.

Advised of our findings, a Region 8 Department officer was sent to the site on May 14, and reported back that he had seen no violations or cause for action--that since the river level had dropped--and a berm or cofferdam had been built by the gravel dredger--this without a permit, too--the equipment was no longer in the river bed, and now the dredger didn't even need a permit to continue the operation. Strangely, the Department officer saw no vehicles using the bridge, and still more strangely, he gave this as the reason that no action by the Department was called for, forgetting his Department's order for removal of the structure, an oversight the river was to pay dearly for one month later.

On May 22, 1969, T.G.F. president Bob Johnson and I went to Albany, met with Commissioner Kilborne, Deputy Commissioner Lawrence and staff members. We stated our position, in part, as follows:

> "We come to Albany today because a situation has come to our attention which deeply shakes

> our confidence in the Department's intent and ability to protect and preserve our environment--under law, in the public interest. We have examined this matter in depth, and will look to the Department for clear and forthright answers concerning the Department's role in this specific case. We have only delved into this one case, but fear that it might be only symptomatic of many other similar or related occurrences."

We showed motion pictures of the Croton River excavation site taken on our visit of May 14, and requested answers to 27 specific questions on this matter (as set forth in material we shall leave here for your consideration). Despite assurances to the contrary, we did not receive then and have not received since, an answer to a single one.

Until the second week of June the gravel dredger continued to dredge and haul gravel from the River--without interference from the Conservation Department. The excavation area, between May 15 and June 15 was sometimes covered by water, a part of the river--at times separated from the main body of the water by narrow gravel banks, pushed one way or the other by the dredger's equipment; from time to time sections extending above or dipping below the water as a result of water level fluctuation.

On May 28, public notice of a new permit application by the dredger appeared. This time, the application was to build a new bridge crossing across the River. T.G.F., on June 3, 1969 wrote the Region 8--Local Permit Agent--in opposition to the application. The deadline for responses to the notice was June 6, and no permit has been issued yet. However, during the first week of June, the dredger, without a permit, started construction of a new bridge crossing and continued without apparent interference until mother nature took a hand this past weekend to write what may be the final chapter in this sordid story.

Over two and-a-half inches of rain fell on the Croton watershed this past weekend and by Monday, June 16, the pushed up gravel mounds and banks (or berm), the remains of the "alleged" bridge previously referred to, the partially constructed "new" bridge, and the dredger's earthen reconstruction of an old bridge downstream from the excavation--all had been washed downstream by the angry, swollen river--coming to rest finally somewhere in the Croton, its estuary, or far out in the Hudson. Where is the bed of the lovely Croton River now?

You'll be riding over some of it around the Hawthorne Circle reconstruction, but you would have enjoyed it much more if it had been left where nature intended. Some of it rests downstream, shoaling pools that once held fish, once were deep enough for swimming while some of it is now in the Hudson, adding still another burden to that most persecuted of rivers.

The eight men from the Conservation Department were shocked at what they saw on Monday, June 16, when they visited the Croton. They shouldn't have been--they let it happen!

In a State whose citizens have approved a billion dollar obligation to clean up water pollution, how can we reconcile this failure to act to prevent ongoing pollution, action entailing no great expenditure, except perhaps the dedicated and courageous effort of those who are already charged with the responsibility of implementing and enacting existing law--those we normally turn to for leadership in conserving our natural resources.

This Croton matter is a relatively simple case. There was no deep philosophical quandary on values. or questions of human or ecological priorities here. In a situation where the public interest seems clearly on one side, one must be appalled at the judgments made and actions taken which apparently favor a private interest, where intensive effort has failed to yield any answer to the question "Why did this happen?"--we find ourselves facing a stone wall, and ask "Who can we turn to, now?"

We hope that bringing this matter before this Conference will stimulate others to help us find some earnest answers. Thank you for giving us this opportunity.

MR. STEIN: Thank you.

Are there any comments or questions?

(No response)

MR. STEIN: Thank you very much for your statement.

A VOICE: Yes, I would like to ask--

MR. STEIN: I am sorry; we do not take statements from the floor.

A VOICE: You asked if there are any comments.

MR. STEIN: I meant from the conferees. That is assumed in every statement we make.

If we opened this up to the floor, we would be here for a very, very long time. I hate to have this kind of ending. It is like a Beethoven Symphony--you never know when it is over.

But, thank you, Mr. Grant.

We have the privilege of having State Senator William J. Ferrall of the 22nd District here.

Senator, do you wish to make a statement, sir?

SENATOR FERRALL: Yes.

MR. STEIN: Will you come up, please?

STATEMENT BY
HON. WILLIAM J. FERRALL
STATE SENATOR
22ND DISTRICT-NEW YORK
BROOKLYN, NEW YORK

SENATOR FERRALL: Mr. Chairman, members of the Conference:

Following the invitation extended to me to attend this Conference, I hoped to prepare a statement in connection with it that might be distributed among the members of the Conference, but I found that the deadline precluded that.

However, basically, what I am going to say today will be related generally in a statement which I hope to submit to the Committee assemblage today.

My name is William J. Ferrall. I am a State Senator from the 22nd Senatorial District in Brooklyn.

I have heard the expression used, "I cover the waterfront," but geographically, within the confines of my Senatorial District, I cover more of the Brooklyn waterfront than any other Senator from that area, and I think more so than any other Senator within the City of New York.

I am deeply concerned about the pollution which exists, particularly as it follows the waters abounding my area and as far as the rest of the city is concerned.

Recently, about a month and-a-half ago, I requested the Chairman of the State Committee on Conservation to come to the waterfront in Brooklyn, particularly in reference to the Gowanus Canal. This is in a particularly heavy industrial area, and we have a very serious pollution condition there.

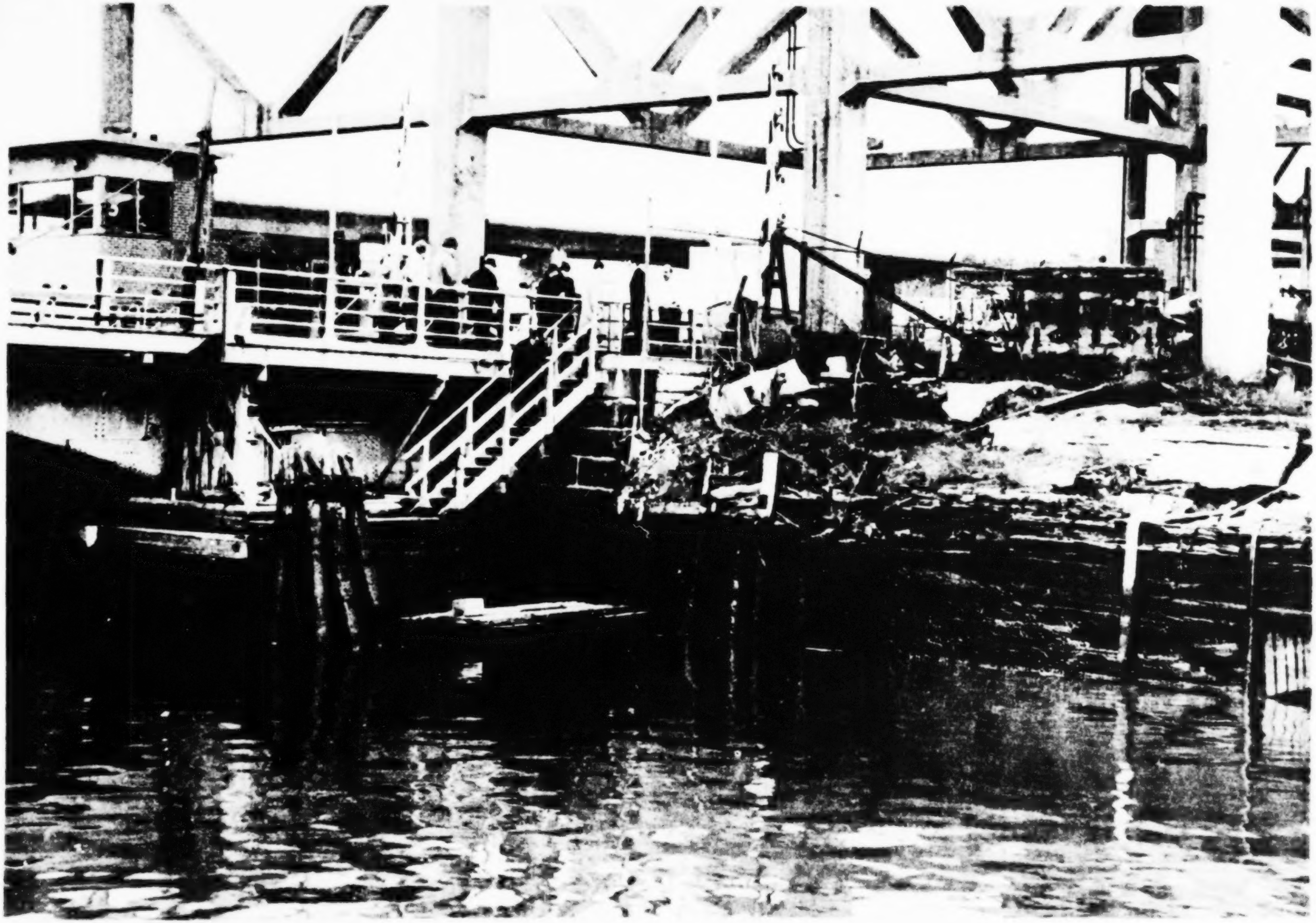
I do know that the Department of the Interior of the United States a few years ago predicted a program whereby interceptors were to be placed on and in the vicinity of the Gowanus Canal in Brooklyn so as to take care of a huge amount of raw sewage which is spilling into the canal and, of course, in addition to the industrial wastes that went into the canal, we have these huge sewers emptying in there also.

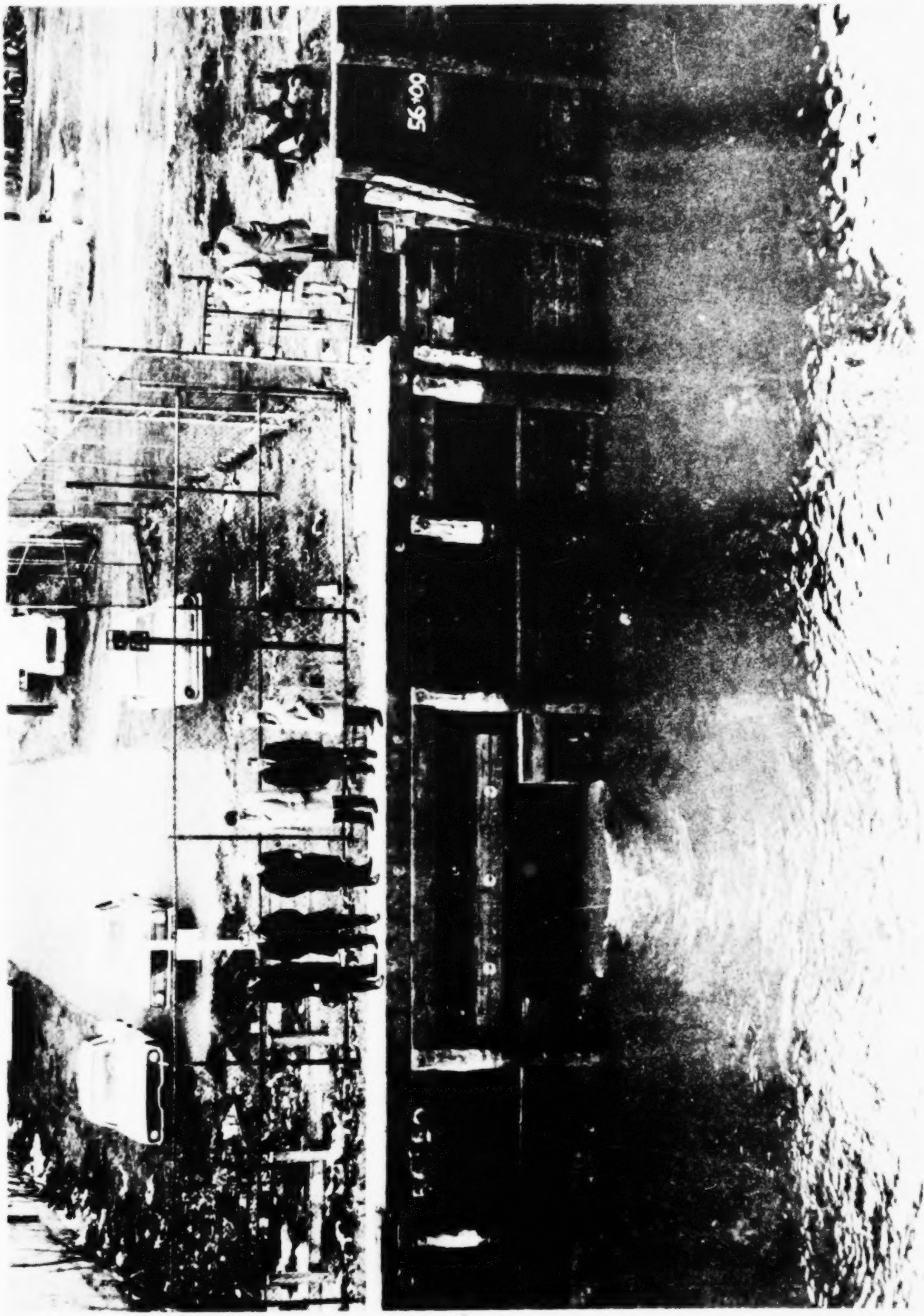
The Committee came down and went over the area and were shocked to see what was very evident there.

We took photographs and I have just a few of them here, indicating the pollution, the muck and mire that exists in the canal and in the bulkheads that abound the canal.

I have here an Exhibit 1, which I would like to present to the committee, showing the area of the Ninth Street Bridge in Brooklyn as it crosses the Gowanus Canal. This speaks for itself.

I have another photograph here which I would like to furnish as Exhibit 2, which shows the Gowanus Canal at the Hamilton Avenue Bridge. There is a sewer outlet there which flows into the canal itself. It is approximately eight or ten feet wide and about four or five feet high.

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The committee saw this, which was something that offended the sensibilities of anyone who was in the remote vicinity of this great sewer, which just throws the raw sewage right into the canal. This was shocking to the committee, and it has been reported in their annual report to the members of the State Legislature.

I do hope that the program for placing interceptors in the vicinity of Gowanus Canal, which was programmed for 1970, will in fact be implemented at an early date, because while there may be certain pollutive conditions in other areas of the State along the Hudson River and its tributaries, I daresay that there isn't any greater pollution area than exists as shown in those exhibits 1 and 2.

Abutting the Gowanus Canal in the vicnity of Ninth Street, Fifth Street, Gowanus Canal and Smith Street in Brooklyn, is an area which was formerly the site of the Brooklyn Union Gas Company Works. The Works have been demolished, and there is just a wide open area there of ten and-a-half acres.

It has been projected that a high school, which is desparately needed in that area, be erected to take care of the tremendous school population in several areas of Brooklyn. But this would be an outlet into which they would feed students from other areas—the construction of a high school there—but you couldn't in fairness to and in the interest of the public, in the interest of the children, construct a high school there with the malodorous conditions that emanate from the canal. With the interceptors there, this condition could be remedied.

I happen to be a member of the Senate Committee on Public Utilities. We have had several hearings in different parts of the State with representatives from different organizations, and public utilities particularly.

We were deeply concerned about the pollution resulting from the creation of nuclear energy.

This particular meeting was held in the Court of Appeals hearing room in Albany.

Representatives there from the different power industries spoke, and it seemed to me that what was testified to there by those representatives indicated an opinion that there would be some pollution, particularly in the operation of these plants, whereby waters which were necessarily used in the production of nuclear energy in certain plants and in connection with the proposed plant--one in particular in Cayuga Lake which was a specific matter of interest at that time--would compound already existing conditions in the Hudson River and in other areas.

You know, the people of the State of New York validated a multi-billion-dollar bond issue--billions, not millions--for clear air and clear water a few years ago. Certainly, the recommendation that this brought to the attention of the people had a real foundation in fact, because it was ridiculous to think otherwise. There was substantial pollution of the waters of our State necessitating this bond issue.

The representatives of the power companies admitted that there would be some element of pollution, particularly in what they call the boiling waters in the waters used from, say, a landlocked lake, drawn from the lake and used for the purpose of storing energy for the overall operation of the plant, then turned back into a lake, a landlocked water particularly. It would take approximately three to four months to cool off.

Now, if there is an already existing polluting condition there, not only in the landlocked waters but also in the Hudson and its tributaries, you are compounding it.

There were several representatives who appeared there, and my inquiry was: you are admitting certainly there are pollutants which are seriously polluting the Hudson and its tributaries and landlocked lakes, which necessitated a billion-dollar bond issue, and you are admitting too that there will be some element of pollution. Don't you think that this requires further study before you project an intensive program of creating further nuclear plants throughout the State particularly those which are within the State of New York? And there was an intensive program in that direction.

What happened to the boiling waters which are put into, for example, a landlocked lake such as Cayuga, which is a substantial lake and a very beautiful one, one of our great natural resources? What happens to the marine life? What happens to the small animal life, and what happens to the fish which are caught by sportsmen in the area? What happens when they catch the fish and bring them home and use them for human consumption? There must be some relaxing somewhere along the line.

It has been the opinion of leading experts in the Department of Conservation of the State of New York and the Department of Health that there are serious disturbances in the ecology of waters, in the marine life, the fishlife, the whole gamut of the life that exists in and about our waters.

This presents a very serious problem, and I do believe that the interest of the people of the State of New York is vastly more important than a stepup in the production of energy through nuclear power. We can resort, as we have in the past, to production of energy by a conventional method, but let's hold up a bit on this.

It has been brought to my attention from authoritative sources in the area of the Indian Point Nuclear Plant that there was shown to be a high incidence of magnesium in the marine plant life in the near vicinity. It has been further brought to my attention that this is not ascribable to any other agent that might be causative of this high incidence of magnesium.

I do hope that the committee or the members of the conference will weigh the overall picture, particularly in the light of what the effect might be insofar as the production of nuclear energy for consumption throughout the State of New York.

As bad as pollution exists from what we have had prior to the production of nuclear energy, it is my opinion, after having received information from authoritative sources, that it is far worse and more dangerous to the people of the State of New York and, of course, to the people who live within the area than there exists presently insofar as pollution from other sources is concerned.

I do not want to be repetitious, but I hope to bring this in sharp perspective.

We have validated that the people of New York are willing to take on a tax burden. They are paying off over $2 billion of monies and interest on it, which will necessarily have to flow over a long period of time--not too long--I think it is approximately ten years that this program is projected for as far as the State of New York is concerned, but they have indicated overwhelmingly their interest in that direction. They are willing to assume the financial burden.

I might bring further to your attention that the necessity for this was approved by the voters at that time, because in the general election a few years ago there were 13 amendments and propositions, and everyone except this multi-billion-dollar bond issue for the clear waters and clear air program went down to defeat.

I think this brings in sharp perspective the deep interest of the people of the State of New York that they want clear waters and clear air, I do hope that the committee will bring my message, and I believe the message of others who may have similarly spoken--I am not privy to what has taken place before--to the end that we will have a sharp curtailment of production of nuclear energy, because, in my opinion, that is more deleterious in its effect to the people, to the health of the people of the State of New York, than pollutants that come from other sources.

I want to thank the committee for your kind permission to say a few words. I was delayed in my arrival here, but circumstances made it necessary that I come at this late hour.

Thank you.

MR. STEIN: Thank you, Senator, for a

thorough and comprehensive statement.

Do we have any comments or questions from the conferees?

MR. METZLER: I am Dwight Metzler from the New York State Health Department.

I would first like to commend Senator Ferrall on his leadership in the New York Senate at this time for having given some comprehensive attention to this problem of thermal pollution from nuclear facilities.

And, as a matter of fact, sponsoring and passing legislation which subsequently went on through the Assembly and which the Governor signed, going into this problem in a comprehensive fashion and, as a matter of fact, the sites have already been chosen and money invested.

I want to call to your attention a matter with which you are already familiar, but perhaps not to this extent, and that is that the standards to provide the kind of protections against thermal pollution which have been recommended by the Department of Health after extensive public hearings are up for adoption July 2nd by the Water Resources Commission. So you might watch that date as, I think, a landmark in our efforts to protect the environment.

These standards have not only been through the public hearing process, but we have checked them with the Department of the Interior at both the regional and Washington levels, and have some very high level assurance that they can also be adopted by the Federal Government as the Federal standards.

If I might, I think sometimes we can solve individual problems, and if the conferees would permit me, I would like to recall a witness to deal with this specific problem which Senator Ferrall has mentioned over in his district.

May I call Mr. Lang?

Can you give us a one-minute solution of this?

SUPPLEMENTARY STATEMENT BY
MR. MARTIN LANG
DIRECTOR
BUREAU OF WATER POLLUTION CONTROL
NEW YORK CITY DEPARTMENT OF WATER RESOURCES

MR. LANG: I am very pleased, Senator, to inform you that we have been extremely conscious of the situation of the Gowanus Canal.

As recently as about four weeks ago, Commissioner Feldman and myself met with Assemblyman Cuite and Borough President Stark to talk about specific action.

You probably are aware of the fact that there is a Douglas Street pumping station at the north end and that alongside of that is that old Gowanus Canal flushing station which introduced circulation at the head of the canal.

The problem has been integrated into the interceptor program for the Red Hook pollution control facilities which we are now going to call the East River Environmental Control Facility.

SENATOR FERRALL: We feel better about that.

MR. LANG: But we have moved ahead on several fronts. One is a purely interim measure.

In the past few years, from time to time I have had bulk sodium nitrate applied at specified sludge banks near Douglas Street, near the chain link fence, to at least ameliorate the stinking condition which undeniably exists there now.

I have, secondly, incorporated a series

of interceptors and sewers all around the periphery of Gowanus Canal to convey that to the Red Hook plant for the high degree of secondary treatment we are going to provide.

Third, I have even gone ahead to eliminate the normal drainage procedures in the City to get out a stripped drainage map for the northwest corner there going up towards Ninth Street and Third Avenue to make sure that that area will be brought in.

And, in fact, as recently as last week, we even met on a construction supervision contract, which I know the State is interested in.

You might be proud of the fact that, you know, trying to save money for the State, I had a brainstorm once, and the designers are adopting it, to put the force mains from the pumping stations to bring these wastes that now go to the Gowanus Canal, and lay that force main right in that old huge tunnel with outlets near Buttermilk Channel, to bring that into the interceptor, which then will go along Furman Street and up to the plant site.

But we have done something else. You know the problem is that pollution is there now and we have existing sludge banks. Well, in 1967 I prepared elaborate documentation which stood about a foot high and I brought it down to City Hall, including a complete set of plans and specifications for dredging. We already had a contract there if the Federal Government would only adopt it, but somehow, Senator, we don't seem to have the finesse to get in on this pork barrel legislation, this River and Harbor Act, and as recently as a week ago, the Deputy Commissioner of Ports and Terminals testified at a congressional committee hearing on this, and in his testimony again he referred to this matter of the Gowanus Canal dredging.

I have prepared all the documentation for the dredging of both Gowanus and Newtown Creek of the pre-existing sludge deposits, and we have a right to go in and ask for this now because now we have plans under way,so we won't keep accumulating it by virtue of the Red Hook plant.

You know, doing a little research in this, I was astonished to find out that they could spend more money in a place like--I wouldn't make up a name like this--Ace Hole Creek in Virginia, than they could for Gowanus and Newtown Creek, but maybe Senator Byrne had a little more leverage in Washington.

So rest assured that on the three fronts for immediate solution, for an ultimate solution and for the dredging, we have been exerting our efforts and we may call on your help to push this dredging.

I say as far back as 1967 we had the contract and specifications in hand doing the work for the Federal Government. All they had to do was adopt it.

SENATOR FERRALL: Is it proper for me to inquire?

MR. STEIN: Go ahead.

SENATOR FERRALL: You are aware that the Department of the Interior has indicated that in 1970 they would have interceptors there taking care of this pollution? Are you familiar with that program, sir?

There was a statement about a year and-a-half ago by a subordinate to the Secretary of the Interior who indicated that they had programmed interceptors to be placed in the area to take care of pollution, and this was set for 1970.

Are you familiar with the specifics?

MR. LANG: Sir, it is not the Department of the Interior. It is we here in New York City who are designing and building these interceptors.

SENATOR FERRALL: All right.

MR. LANG: I know of no interceptors by the Department of the Interior in this area.

SENATOR FERRALL: Well, I don't have it with me, but it was brought to the attention of Congressman John J. Rooney from a man in that interior department who was in charge of pollution, and so forth, that they had programmed for 1970.

Now, I was aware that the City of New York had something in mind for 1972. We tried to update the program to 1970 to conform to the Federal program.

MR. LANG: I can give you a specific timetable on each of the four contracts involved in this area. Some of them we have actually on a chart that was displayed here yesterday, but I think that there has been a breakdown in communications. This sounds like feedback from the Department of the Interior as to what the City of New York is going to do for itself.

SENATOR FERRALL: As long as it is a cooperative effort.

Thank you very much.

MR. STEIN: Thank you, Senator Ferrall.

I think we have one more statement.

Before we call him, I have a little advice, and it might be gratuitous advice, dealing with finesse on how to get items in the omnibus Rivers and Harbors Bill. I have never heard anyone who has had much success with that kind of appropriation who kept calling it "A pork barrel bill" (laughter).

At this point, I think we have our last speaker. May we call on Jesse W. Brodey of the editorial staff of the Daily News. I think Mr. Brodey is our last speaker.

I heard a story up here, which is probably apocryphal of the way old Jimmy Walker, who used to be the Mayor, first came into prominence when he was put on last for a speech in the old, old Madison Square Garden which was at Herald Square. This was around Washington's Birthday, and he said it reminded him, of course, of the first President, and he said, "He was first in war, first in peace and first in the hearts of his countrymen, but even he married a widow." (laughter)

STATEMENT BY

MR. JESSE W. BRODEY

EDITORIAL STAFF

NEW YORK DAILY NEWS

MR. BRODEY: I am not speaking as a member of the staff of the Daily News. I am speaking as an individual who, for the last thirteen years, happens to have been working as a reporter covering the whole Hudson Valley and the Hudson River and has done numerous articles on conservation and the efforts to clean up the rivers.

I will admit that I have been quite frustrated over the years.

I came down here with Gardner Grant because I wanted to get a story on his latest rap at the State's handling of the Croton River situation. I happened to have been up there when photographs were taken, and I did a feature story for the New York Sunday News and it still did not stop this firm from converting the Croton River into the equivalent of a Colorado strip mining operation. If you went up there at the time I was there, your heart would have sunk.

This is one of the best trout fishing

streams closest to New York City, and the New York Daily News has for years sent up photographers to take pictures of the trout fishermen on the opening day of the season standing three feet apart trying to catch trout, and many of them catch trout. You were always sure to get a picture of a kid with trout there.

I believe the Croton River is not within the jurisdiction of the Department of the Interior. It incidentally is not within the jurisdiction, I discovered in researching this article, of the Hudson River Valley Commission.

Many of you people will be surprised to learn that I got a very irritated letter from a member of the staff of the Hudson River Valley Commission after I wrote this article, for pointing out that the Hudson River Valley Commission, as all of us had been led to believe, was a protective agency for the Hudson River--I got this letter saying they had nothing to do with the Croton River, or this part of the Croton River, because this spot was two miles up the river.

I then discovered that the Hudson River Valley Commission by law doesn't have any control over the river. Its jurisdiction is restricted to one mile of banks on either side of the river within the jurisdiction of New York State, and it cannot tell anything about anything beyond one mile unless it happens to be within site of the river. At that point, it can make recommendations and suggestions after holding public hearings, and whoever wants to build a 20-story or 30-story building can go ahead and build it, because the Hudson River Valley Commission has no enforcement procedures.

Now, when we went up and looked at the Croton River and saw this devastation, I got on the 'phone, naturally, to check out the story, and I called the New Paltz office of the State Conservation Department, which, incidentally, has enforcement powers delegated to it by the Water Resources Commission. And if you think the Water Resources Commission is going to protect the Hudson River from thermal pollution, forget it, because they are going to operate the same way as they operated in the Croton River.

They turn the jurisdiction of enforcement over to the Department of Conservation, and depending on the political pressures on the Department of Conservation, they are enforced or maybe they are not enforced.

Now, in this instance I called the Department of Conservation. They sent a man down immediately to inspect the site, and he told me this fellow doesn't even need a permit to do this operation. He had built a dam across the river and diverted the river through to six-foot concrete pipes, I guess you would call them, and the dam had already been washed out a couple of times. I understand it was washed out again. It was nothing more than an earthen dam across the river.

Now, under the law, anybody who builds a dam across a State stream has to get a permit for that, but the conservation officer--and I have his name any time anybody wants it--told me on the 'phone no permit was needed. He referred back to his office that no permit was needed. I called the office and they confirmed it.

He said, "They are not working in the bed of the river. They are working on dry land." The dry land consisted of a dike or bridge built across the bed of the river to divert it.

When I went to the Town of Cortland to ask them if they were going to do anything about it, the

Town Supervisor told me he couldn't do anything about it because his town had no jurisdiction over the bed of the river, and they were working in the bed of the river so they couldn't enforce the zoning laws against this outfit.

Now, in doing a little more research, it is very interesting to note that the State Legislation that created the Water Resources Commission gave it jurisdiction over the beds and banks of the rivers, but in promulgating its regulations, for some strange reason, the Water Resources Commission conveniently left out any reference to the banks of the streams.

I say to you gentlemen in the Federal Government that there has been too much buckpassing on this for 13, or maybe 15 or 20 years.

I grew up in New York City. I have lived in New York City or its suburbs for over 50 years. I have watched streams that we could swim in once upon a time completely deteriorated.

I did a story about the New York Central Railroad polluting the Hudson River with oil from its docks at Harmon. We took pictures of the oil flowing into the river. This was a couple of years ago.

I called the United States Attorney's Office and got in touch with the Assistant United States Attorney, who is now no longer with them since there was a change in administration, and I spoke to this fellow and asked him what he was doing about it. He said he needed evidence.

I said, "Well, we have a photograph which was taken. We have three men who will swear to the date it was taken, a photograph of oil coming out of that pipe. If you want to come up here, you can look at it."

Well, I sent him that evidence with a signed affidavit on the back of it. We ran the story in the newspapers. To this date, I think the oil is still coming out of that pipe.

I think it is time that if the Federal Government or if we expect the Hudson River to be protected, that the Federal Government and the Department of the Interior, which is interested in real conservation, should get into the picture and stop letting State politicians interfere in the operation.

Gravel operations, for example, are a multi-million-dollar operation. When a fellow gets a 23 or $25 million contract to build an interchange at the Hawthorne Circle, if he can save $200,000 or $300,000 on gravel that every other contractor thought they would have to bring from Staten Island and this fellow has an in to break the law and get it locally, or by stealing it off county park land, I think it is time the Federal Government stepped in and provided us with a real strong conservation program.

MR. STEIN: Thank you, Mr. Brodey.

Are there any comments or questions?

MR. METZLER: Well, I hesitate to let the kind of charges stay on the record that have been made here.

I think I share the impatience of the speaker with the slowness of the pollution abatement efforts in the Hudson River Valley and in New York State. I have that same kind of impatience.

But when I go to the track and bet on a horse, I try to pick one that has a track record. If you believe that the State of New York Pure Waters Program doesn't have a good track record as it has moved in the last two to two and-a-half years, then I don't believe you are looking at the record. What I would like to do is offer you an opportunity to see what has actually happened.

You mentioned going someplace, but you didn't go to the right place. If you had come to us in the first place, it would have been abated and we would handle it. I would hope you might be reassured if you sat with us and go over polluter by polluter the progress which is being made under the program for which the State Health Department has the responsibility, and go over the progress that has been made.

I would like that chance to go over it with you.

MR. BRODEY: Well, I assure you I have been in constant touch with your office in White Plains. Your good aide over there is sitting in that corner. He knows me personally for the last five or six years.

I have done some very good stories about your Department's efforts. But it so happens that on the Croton River, your Department has no jurisdiction and was not able to do anything about it, so nobody went to the Health Department, or possibly they spoke to you and they were told that the siltation was not a pollution situation, that it was something that the Conservation Department had to deal with.

I assure you that the oil situation at the Harmon yards, and the date on the pipe is, I think, 1929--that has been going on since 1929--was called to your Department's attention.

It did come under the Federal laws about polluting the rivers. The Army engineers had jurisdiction. They did nothing about it. It was repeatedly called to their attention by the Hudson River Fishermen's Association, and those fellows were tearing their hair out trying to get some action someplace.

I assure you I have researched this thing very thoroughly and I have a very thick file--it is much thicker than this (indicating)--with documents. I have Xerox copies of the State law that I just quoted to you where they eliminated the banks from the regulations in the Water Resources Commission regulations, and I have a Xerox copy of the State law.

You fellows in the Health Department are trying to clear up the sewage. You have done a pretty good job in many places. You haven't been able to get New York City to quit dumping its raw sewage into the river from the Bronx yet. If you would tell the people here right now how many tons of raw sewage are going into the Hudson River and the East River untreated from New York City, their hair would stand up.

You or the Federal Government have made great efforts, but what the multi-billion-dollar or million-dollar State bond issue for river pollution has turned up to the present are mostly more and more studies of what to do about eliminating sewage problems, and less action in the actual construction of much needed plants.

I think you ought to get moving on building these plants so that our grandchildren will be able to swim in some of the places where I used to swim.

MR. METZLER: I agree with you completely on that last statement, and while I have some difference of opinion on your evaluation of the success of the program until now, I want to compliment you for keeping the heat on, because this is fine, and I encourage you to do more of it.

MR. STEIN: Thank you, Mr. Brodey.

MR. BRODEY: This was all ad lib, and I only spoke out this way because sitting here, watching what was going on, I finally had to say something.

MR. STEIN: That is why we are here. Thank you very much, because it is testimony like yours that helps us.

Aside from putting on the record the kind of raw sewage going into the Hudson, this was the basis of our conference here and the reason that the people are sitting here.

Mr. Glenn has mentioned that in his speeches for years.

You have to remember this, and I just ask you to bear with us: If you look at the records of the first conference, you will find the problem laid out. We are dealing with the heroic job of trying to put together our multi-million-dollar complex construction problems in some of the most highly congested population areas in the Western World, and we are dealing with extensive properties. Everytime you move an inch, something has to give.

I ask you not to be overwhelmed by the horrible detail that the officials and the bureaucrats have to go into to put this program into place. Our objective is precisely to stop what you people have been talking about, but this is the only way we know under the law to do it.

If there is nothing more, we will stand

recessed, and we should make an announcement possibly between four and five in this room.

(Whereupon, at 12:55 p.m., the conferees went into Executive Session. At 4:20 p.m., the conferees returned and the following ensued:)

MR. STEIN: Thank you for staying with us.

Considering the group here, Joan, if you can keep the duplicating machine running, I think we can make a copy available to everyone who stayed with us all this time so that they can read it, but let me read it for those who do not have it now. If you want one of these, you can pick it up on the way back.

We have had unanimous agreement among the conferees.

The conferees agreed upon the following conclusions and recommendations:

1. The States and the interstate water pollution control agencies, that is, the New Jersey State Department of Health, the New York State Department of Health and the Interstate Sanitation Commission, are taking effective action to abate pollution in accordance with the agreements arrived at the Conference on Pollution of Interstate Waters of the Hudson River and its

Tributaries held under the provisions of the Federal Water Pollution Control Act.

2. An extensive pollution abatement program is moving forward toward the attainment of water quality agreed on by the conferees representing the States of New Jersey, New York, the Interstate Sanitation Commission and the Federal Government.

3. The treatment required from sources discharging into the Hudson River and its tributaries is consistent throughout the basin and mutually satisfactory to all the regulatory agencies concerned.

4. In view of the complexities of the problem, the conferees will plan to meet again in the late fall or winter of 1970 to evaluate progress on a case by case basis.

5. The activities of the Interstate Sanitation Commission in analyzing combined sewer overflows in the Hudson River Conference Area is recognized. The conferees will participate with and support the Interstate Sanitation Commission in a detailed examination of storm water overflows as the first stage in the development of a remedial program, as needed; the New York State Department of Health will carry out that

portion of this activity in the Hudson River Basin outside the jurisdiction of the Interstate Sanitation Commission. A joint report on this subject will be made to the conferees at the next session.

6. The State and interstate conferees agree that recent Federal action makes it appear that the Fiscal Year 1970 appropriations will be about one-fifth the authorization of $1 billion. They urge that the authorized amounts be appropriated if water pollution control needs are to be met. Further, the reimbursement features of the present statute must be retained.

That concludes this.

I am sure many of the State and interstate agencies' representatives will be available and, of course, we will be available to anyone who has any questions after the Conference.

Do any of the conferees have anything to say at this point?

(No response)

MR. STEIN: If not, I would like to thank you all for staying and for your participation.

In this hard stage of one of the most extensive abatement programs, I really do think I can see the light at the end of the tunnel. Maybe it is more dimly perceived by some than others, but I really do see it and I think we are moving forward. We just have to pay attention to the detail and be sure that nothing lags. I see our way toward a clean Hudson River.

This Conference stands adjourned.

(Whereupon, at 4:25 p.m., the Conference was adjourned.)

* * *

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
26 FEDERAL PLAZA
NEW YORK, N. Y. 10007

IN REPLY REFER TO
NANOP-E

1 July 1969

Mr. Lester M. Klashman, Regional Director
Federal Water Pollution Control Administration
John F. Kennedy Federal Building
Boston, Massasschusetts 02203

Dear Sir:

Reference is made to the conference on pollution of the interstate waters of the Hudson River on 18 and 19 June 1969 in New York, N. Y.

At the conference on 18 June, additional information was requested to be furnished for the use of the conferees concerning the disposal areas in the Atlantic Ocean off the entrance to New York Harbor and the design of a sewage treatment facility at the Military Ocean Terminal, Bayonne, New Jersey.

There is inclosed for the record of the conference, a supplemental statement covering the points raised.

Sincerely yours,

R. H. WUESTEFELD
Assistant Chief, Operations
Division

1 Incl
Supp. Statement

Supplemental Statement by Robert Wuestefeld, Assistant Chief of Operations, New York District, Corps of Engineers for Inclusion in the Record of the Third Conference on Pollution of the Interstate Waters of the Hudson River.

At the Military Ocean Terminal, Bayonne, New Jersey, sewage is now being given on-site primary treatment with the effluent being discharged into Upper Bay. In order to upgrade the treatment of sewage to comply with Section 4 of Executive Order 11288, authority was granted by Public Law 90-408 to modify the existing primary sewage treatment plant and facilities to provide secondary sewage treatment and post chlorination facilities for treatment of the sewage effluent. An on-site plant was selected to accomplish this purpose on the basis of a feasibility study prepared for the Navy Department indicating that this scheme would have a lower annual operating cost than offsite discharge into the City of Bayonne's sewerage system. Although the validity of this study is now questioned, preliminary design for modification of the on-site plant to provide secondary treatment, is proceeding. It is expected to be completed about 22 July 1969. In the meantime, the Military Ocean Terminal is working to secure a firm estimate of the separate costs of fresh water supplied to the terminal by the city and the price which would have to be paid for sewage treatment.

The dumping grounds for the disposal of waste materials in the Atlantic Ocean off the entrance to New York Harbor which have been designated by the Supervisor of New York Harbor under the provisions of the Act of Congress approved 12 June 1888, (33 U. S. C. 44) are as follows:

1. A Mud Dumping Ground is located not less than 4 nautical miles bearing 198° True from Ambrose Light in not less than 60 feet of water. Material dredged from vessel berths, anchorage grounds and channels, clean earth and steam ashes are dumped in this area.

2. A Cellar Dirt Dumping Ground is located not less than 4.7 nautical miles bearing 170° True from Ambrose Light in not less than 90 feet of water. Material excavated from cellars and foundations consisting of broken concrete, blasted rock, and rubble are dumped in this area.

3. A Sewer Sludge Dumping Ground is located not less than 4.5 nautical miles 124° 30' True from Ambrose Light. Sewage wastes in raw or treated state are disposed of in this dumping ground by the City of New York, the cities of Glen Cove and Long Beach, the counties of Nassau and Westchester, all in the State of New York, and by the Passaic Valley Sewerage Commission, the Linden-Roselle Sewerage Authority, the Joint Meeting Sewage Disposal Commission and the Sewerage Authorities of Bergen and Middlesex Counties in the State of New Jersey.

4. A Wreck Dumping Ground is located 14.3 nautical miles 168° 30' True from Ambrose Light in not less than 200 feet of water.

5. A Waste Acid Dumping Ground is located about 9.3 nautical miles 145° True from Ambrose Light. This area is south of latitude 40° 20' and east of longitude 73° 40' during the summer season and east of longitude 73° 43' during the winter season. Contributors to this dumping ground include the National Lead Company, Sayreville, New Jersey, the General Chemical Company, Elizabeth, New Jersey; and several smaller industries in the vicinity of South Amboy, New Jersey.

6. A Waste Chemical Dumping Ground is located about 106 miles southeast of Ambrose Light on the edge of the Continental Shelf. This area is more particularly described as lying south of latitude 39° 00' North, west of longitude 72° 00' west, north of latitude 38° 30' north, and east of longitude 72° 30' west. Contributors to this dumping ground have been the Tappan Tanker Terminal at Hastings-on-Hudson, New York which disposes of chemicals from the Nepera Chemical Company of Harriman, New York; the American Cyanamid Company at Linden, New Jersey; and Chevion Oil Company of Perth Amboy, New Jersey.

The volume of material has remained fairly constant over the past few years, although there has been an increase in the sewage sludge dumped at sea during 1968. Our records show that during the 12-month period ending on 30 June 1968, a total of 17,110,144 cubic yards of material was disposed of in the dumping grounds in the Atlantic Ocean. A breakdown of this operation is as follows:

Dumping Ground	Volume	
Mud	8,784,200	cubic yards
Cellar Dirt	318,875	" "
Sewer Sludge	4,833,730	" "
Waste Acid	3,117,623	" "
Wreck	3,000	" "
Chemical (Toxic)	52,716	" "
	17,110,144	cubic yards

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